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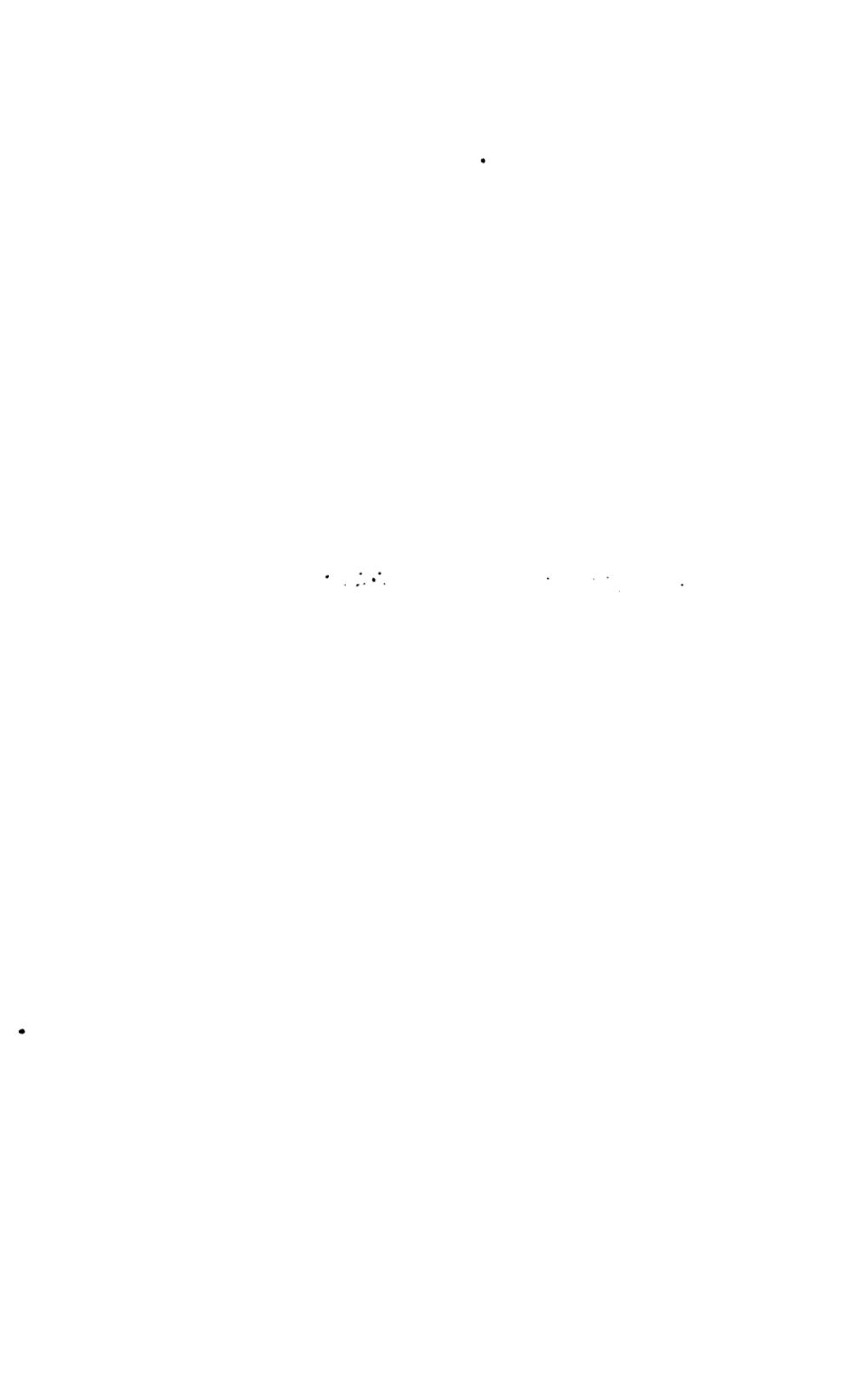
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PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Antiseptic Excision of the Knee-joint.* By CHARLES COPPINGER, Surgeon to the Mater Misericordiae Hospital.

As the recent discussion on the antiseptic treatment of wounds, and the statistics on the subject which have lately been brought before the profession, cannot fail to modify the practice of many surgeons who have not hitherto adopted that method in its entirety, the following remarks on excision of the knee-joint will not be just now without interest.

The number of splints and appliances which have been devised for use after this operation is sufficient evidence of the difficulty experienced by surgeons in maintaining a proper position of the limb during the somewhat long convalescence which follows it, and this task is now rendered still more difficult, and our choice of a suitable apparatus much restricted, by the necessity for free access to the wound which Mr. Lister's system of dressing requires.

On the other hand, this method of treatment offers peculiar advantages after such a procedure as excision of the knee—an operation by which large, freshly-divided bone surfaces are exposed in a granulating wound in communication with the air, and by which the patient is usually subjected for many months to the danger of septic infection—a danger which, moreover, in these cases, is much increased by the almost unavoidable occurrence of slight movements between the divided ends of the bones, by which perfect

rest in the wound is interfered with. In the absence of antiseptic dressings such movements always exert a most injurious influence on the progress of the case. In the first place, by displacing and wounding the newly-formed tissue, by which repair is accomplished, they directly interfere with the reparative process itself; while, secondly, they favour the absorption of septic material, by causing rupture of the delicate granulation film, to which Mr. Savory has lately prominently alluded, and on which he so much depends, as a natural safeguard against infection. Whether or not this be a correct explanation of the manner in which disturbances of the wound affect the patient's general condition, the fact remains; and a rather large experience of this operation during the last ten years has convinced me that it is impossible to exaggerate the injurious effect, in some manner produced, by even slight movements of the bones or displacement of the deeper portions of the wound. I have repeatedly verified the bad effect of such disturbances by the evidence of the patient's condition derivable from the pulse and temperature chart, even where no annoyance or pain was referred to the seat of the wound, and I have witnessed the failure of the operation in cases in which the surgeon's efforts to prevent this motion by an apparatus had been unsuccessful, and in which continuous slight disturbances had maintained a permanent derangement of the patient's temperature and nutrition.

From these considerations it follows that, during convalescence after this operation, the seat of the wound should be most carefully kept at rest by the use of a reliable apparatus, and that the bad effects of accidental motion should be as much as possible lessened, and the danger of septic infection otherwise prevented by strict adherence to the details of antiseptic treatment.

We now come to the practical question—What apparatus will secure us, as far as possible, against the evil effects of motion in the wound, and, at the same time, allow the convenient application of the above-mentioned method of treatment?

The splints of which we have had experience at the Mater Misericordiae Hospital fairly represent the different views of surgeons on this subject. They include the modification of M'Intyre's apparatus devised by Mr. Price, the box-splint of Mr. Butcher, the plaster-of-Paris appliance of Mr. Patrick Heron Watson, and the gypsum apparatus recommended by my colleague, Mr. Hayes.

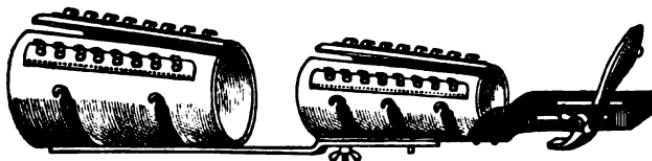
Mr. Hayes' splint, which was described some years ago in this Journal, and which has since been modified by him, was the only

one of these which, from its construction, offered facilities for the application of Professor Lister's dressings, and it was accordingly used by me in an excision of the knee, which was performed in May, 1876, under carbolic spray and with full antiseptic precautions. In this case, unfortunately, the gypsum in the neighbourhood of the wound was prevented from setting by frequent dressings under spray, rendered necessary by an unusually large quantity of serous discharge following the operation, and it was for that reason found impossible to maintain asepsis in the wound. Now, this disadvantage, common to every description of plaster-of-Paris apparatus, can no doubt be avoided by deferring the application of the splint until the profuse discharge of serum and blood caused by the irritant action of the carbolic acid, and which immediately follows the operation, has ceased, and until the danger of reactionary or secondary bleeding has passed away; but this course has the manifest disadvantage of entailing on the exhausted patient a second operation which usually requires anaesthesia, and which is often almost as severe and protracted as the original procedure. It is, moreover, unnecessary, if careful attention be paid to the prevention of haemorrhage, and if a suitable apparatus be made use of. Surgeons are induced to adopt this course on account solely of the difficulty of readjusting a gypsum apparatus when it has once set, but this circumstance seems rather to afford an argument against the use of the so-called immovable apparatus than furnish one in favour of a practice otherwise so objectionable. Again, this or any form of fixed or immovable splint has for our present purpose a great disadvantage in containing no provision to meet the change in size which the limb undergoes subsequent to the operation, and great skill is consequently required in its application to enable us to strike the happy mean between a splint too tight to allow space for inflammatory swelling and a loosely fitting apparatus, which will prove altogether useless at a later period when inflammatory enlargement has given place to muscular atrophy and contraction.

In some patients, more especially in children and in those in whom the joint degeneration is preceded or accompanied by osteitis, the wasting of muscular structures in the limb has already taken place, and the only subsequent alteration which occurs in its size is the enlargement in the immediate vicinity of the wound; but as a general rule this operation is followed by a considerable diminution in the size of the limb. In muscular adults with languid circulation

it is on this account often impossible to apply a gypsum case in such a manner as to allow proper blood supply to the wound, and at the same time with sufficient tightness to make allowance for subsequent atrophy in the muscles of the thigh and leg. In last February the operation was performed by me on a patient of this class, and I was ultimately obliged to amputate the limb; for considerable swelling and œdema occurred in the neighbourhood of the wound, which necessitated such a free division of the plaster case that it finally became useless, and although it was removed and reapplied, it was found in the end impossible to preserve the leg.

Since that date I have made use of the apparatus represented in the accompanying woodcut in three cases of excision of the knee-joint; and experience of this new splint has satisfied me that it is as firm as the gypsum apparatus, far more easy to apply and remove, that it is not injuriously affected by carbolic spray, and, above all, that it can be tightened or the reverse when necessary.



It consists of a posterior bar of polished iron, as in Mr. Hayes' splint, reaching along the thigh and leg, and constructed of two parts, arranged to slide along one another, and clamped together by a screw. To this posterior bar, which is rectangular on section, strong, and rigid, are attached, at intervals, pieces of soft sheet-iron long enough to half encircle the limb. Two pieces of poroplastic material, enclosing the thigh and leg respectively, are riveted to these bands, and are provided with hooks similar to those used by bootmakers, by means of which the splint can be securely laced on to the limb. To the leg or distal end of the posterior bar a foot-piece is attached of the same description as that of the iron splint known as M'Intyre's, and secured by a screw, as in that splint.

It will be noticed, on referring to the illustration, that in the neighbourhood of the wound this apparatus, when applied, presents simply the posterior flat bar of iron, by which alone the thigh and leg portions of the splint are connected, and which is itself removed some distance from the popliteal skin. There is thus no difficulty

in the application of the antiseptic dressings, while any swelling, or accumulation of matter in the popliteal space, is open to inspection.

The following is the method of applying the splint:—When the operation has concluded and the haemorrhage been arrested, by ligatures or otherwise, a piece of "protective" is placed along the wound, and the limb carefully adjusted in the splint, which has previously been heated or dipped into hot water to render the poroplastic felt flexible. A small separate piece of softened felt is now applied along the front of the thigh so as to act as a tongue, and the plastic material moulded, by pressure, to the limb. The soft iron hoops, of course, yield when pressed upon, so that, when the leg and thigh portions of the splint are drawn together by laces, the limb is most securely held by the apparatus. The protective is then removed under spray, short drainage tubes are placed at each angle of the wound, and wire or carbolised sutures tied along its margins. The gauze dressing should be applied so as to encircle the limb, but not to include the posterior bar. The foot-piece is set at a proper angle, and, when the patient has been placed in bed, the whole apparatus is slung from a strong cradle by means of cords attached to the extremities of the flat hoops of iron, by which the felt is encircled. All danger of the absorption of discharges by the poroplastic material is prevented by the fact that it is situated some distance from the line of incision, and not beneath it, and by the surgeon's adopting the precaution of painting the apparatus over with a thin coat of melting paraffin wax, in which crystals of thymol or of carbolic acid have been dissolved.

As it is often advisable to leave the splint without removal for two or three months, care should be taken in the choice of soft and well-fitting pads, which previous to use should be dipped in a hot saturated solution of boracic acid and thoroughly dried. After this treatment they will be found covered with fine crystals of the acid, the mechanical effect of which is similar to that of powdered French chalk in preventing wrinkling, &c.; while by this means the danger of decomposition or of the entrance of pediculi under the splint is effectually prevented.

The form of drainage tube suitable in these cases, and, indeed, most useful in many wounds over which carbolic gauze dressings are applied, is represented in the accompanying woodcut, and consists of the usual perforated India-rubber, with a broad flange of the same material at one end, attached either obliquely or at a right angle with the axis of the tube.

The obliquely flanged drain is that most generally useful, and will be found especially convenient in securing drainage of the pleural cavity.



These tubes are constructed of the best description of rubber, as recommended by Mr. Lister, and they are quite reliable in this respect, for the very good reason that they cannot be constructed of the impure or vulcanised material. They can be cut to any length, and can be easily inserted by means of a probe notched at the end, as shown in the woodcut. By the use of these drains, which I devised some years ago, and of which I have had a large quantity constructed,* the annoyance, caused by the slipping of the ordinary drainage tube altogether into an abscess or wound, is avoided. This is, of course, but a small evil when it occurs with the Neuber drainage-tube of decalcified bone, as indeed it is very liable to do, but the matter becomes rather serious when a rubber tube meets a similar fate, and is perhaps destined to remain (as in a case which I lately heard of) in the patient's pleural cavity as a permanent relic of a former operation.

The following are brief notes of the cases in which I have, up to the present, made use of this splint:—

CASE I.—J. M'C., a delicate-looking girl, aged twenty-four, was admitted to the Mater Misericordiae Hospital in June, 1879, suffering apparently from articular osteitis, with degeneration of the left knee-joint, the disease being of five years' duration. There was no history of injury to the joint, and there was not at any time much pain or swelling in connexion with the disease. The operation, which was performed antiseptically July 9, 1879, revealed, however, the presence of an abscess about the size of a walnut in the head of the tibia, adjoining the left semilunar cartilage, which had been perforated by the opening of its cavity into the joint.

In this case not more than the usual amount of bone was removed, but an aperture was drilled through the tibia from the side, so that a

* These drainage tubes are now to be had of all sizes from Messrs. Fannin & Co., of Grafton-street, and from Mr. Whyte, of Sackville-street, Dublin.

short drainage-tube could be passed into the abscess in the head of the bone, its other end protruding through the angle of the incision in the soft structures. Very slight constitutional disturbance followed the operation, the temperature never rising above 100°, and little or no pain was complained of.

After eight weeks the thumb-screw, by which the leg and thigh portions of the splint were bound together, was loosened temporarily, and bony union ascertained to be quite firm. As, however, the external wound had not closed, it was then thought better, mindful of the cavity which had existed in the tibia, to defer the removal of the apparatus; but, a month later—that is, twelve weeks after the operation—the splint was finally removed, and the poroplastic material found as firm as when first applied.

Before leaving the hospital the patient was provided with a suitably-constructed boot, with a heel raised, in order to counterbalance the shortening of the limb. She is now in perfect health, she has a straight leg, and she has recently written from the country stating that she can walk considerable distances without pain or inconvenience.

CASE II.—P. M., a healthy-looking man, aged twenty-six, was admitted to the Mater Misericordiae Hospital suffering from degeneration of the left knee, which had followed a blow received on the outer side of the joint more than five years ago. This patient had been for the previous year in the Thurles Union Hospital, and came up to Dublin in order to have his leg amputated. His case, however, seemed, from every point of view, a most favourable one for excision, and the operation was accordingly performed on October 24.

The articular cartilages were found eroded and diseased, and a small abscess or collection of caseous material was discovered in the substance of the external condyle of the femur, in a situation corresponding to the site of the original injury.

The wound, in this case, united by that peculiar process of repair which we never meet with except under antiseptic conditions, but which is unfortunately so much less frequently seen than described. Union took place by granulations, and the incision was not completely closed for seven weeks; but during that period absolutely no pus or puriform liquid was visible on the dressings, although they were changed only at intervals of from three to seven days.

This man left the hospital with a straight and good limb, and I have just ascertained from the country that he is now in perfect health and walking about.

CASE III.—M. F., a married woman, aged thirty-two, was admitted to the Mater Misericordiae Hospital, in last October, suffering from disorganisation of the left knee-joint. In this rather unfavourable case the

joint had been for three years semiflexed, the tibia was luxated backwards, and the patella was firmly adherent to the end of the femur. Excision was performed antiseptically on November 16, 1879; and, although the disease was confined to the cartilages and articular extremities, an unusually large amount of the bones required to be removed, and the hamstring tendons to be freely divided on both sides, before the tibia and femur could be placed in position.

This patient, as might be anticipated, has recovered somewhat slowly, and she is still in the hospital; but she has now grown fat, the incision has long since closed, and she is up and walking with some support, her complete recovery having been retarded chiefly by the occurrence of small cutaneous abscesses in the neighbourhood of the operation wound.

The practice of suspending the leg after operation, so as to allow unavoidable movements of the limb as a whole, while injurious motion at the seat of the operation is prevented, is a most valuable one. It was first adopted, in connexion with Mr. P. H. Watson's splint, by my late friend, Mr. Tyrrell, and on looking over my notes of over thirty excisions of the knee-joint, performed by my colleagues and myself at the Mater Misericordiae Hospital since I became connected with that institution, I am forcibly reminded of how much we owe to his successful labours in rendering this great operation popular with Dublin surgeons.

ART. II.—*Medical Report of the Fever Hospital and House of Recovery, Cork-street, Dublin, for the Year ending 31st March, 1880.* By REUBEN J. HARVEY, M.D., F.K.Q.C.P.; Physician to the Hospital; Assistant Physician to the Richmond, Whitworth, and Hardwicke Hospitals; Lecturer on Physiology in the Carmichael College, &c.

THE duty of writing the Annual Medical Report of Cork-street Fever Hospital having devolved upon me for the first time, I feel it but right to record my sense of the privilege of having so excellent a plan to follow as that adopted in our Reports for the past three years. This plan, it will be remembered, was devised by our (now) Consulting Physician, Dr. Grimshaw, Registrar-General for Ireland, and consists essentially in a running commentary on a series of analytical tables, which not only deal with the statistics afforded by the year in all their general bearings, but render the comparison of one year with another a matter of the utmost facility.

These tables, with the exception of that on the weather, have,

as usual, been compiled by our Registrar, Dr. G. Purcell Atkins, with his wonted care and skill. They are, for the most part, drawn up upon the monthly plan, and are a comparatively simple outcome of the excellent system he adopts in the keeping of the hospital register, whereby it is at all times available for tracing the history either of individual cases or of epidemics.

I am indebted to my colleague, Dr. J. W. Moore, for the valuable meteorological statistics with which he has furnished me—an item which for some years back has formed an essential element in our Reports. The importance of recording the history of the weather side by side with the appearance and variations of epidemics cannot be over-estimated, and is none the less important because we are as yet unable to trace any very certain relation between them.

The year which terminated on the 31st March, 1880, has been one of unusual strain upon the resources of the hospital. For although the total number of admissions was but little over half of that in the preceding year, it was still greatly above the average, and was largely composed of cases of smallpox—a disease which, in its treatment, entails much more than ordinary labour and expenditure.

The total number of admissions during the year 1879-80 was 1,083. The corresponding numbers for the past three years were—

1876-77	-	-	-	666
1877-78	-	-	-	936
1878-79	-	-	-	2,151

The fluctuation in these latter numbers is mainly due to the epidemic of smallpox which developed in the autumn of 1876. If we omit the smallpox cases, we get, for the *four* years—

1876-77	-	-	-	637
1877-78	-	-	-	683
1878-79	-	-	-	642
1879-80	-	-	-	483

which shows that the total number of cases other than smallpox was steadily maintained at about 650 for each of the three preceding years, but has this year fallen to 483—a diminution of about 25 per cent.* It is interesting to note that from 1st May, 1804,

* These numbers can only be taken as a very rough estimate of the number of cases of general febrile disease, for they include cases of "No Disease," which, in the year 1878-79, amounted to 44, being principally mothers of infants suffering from scarlatina.

when the hospital was opened for the reception of patients, to 31st March, 1880, inclusive, the admissions were 204,080. Of this vast number of patients, 188,968 were discharged cured or relieved, and 15,032 died.

TABLE I.—*Showing the Monthly Statement of Patients from 1st April, 1879, to 31st March, 1880.*

Years	Months	Admitted	Daily Average No. of Patients in Hospital
1879	April,	107	80·00
	May,	117	81·29
	June,	81	70·56
	July,	52	54·39
	August,	62	35·80
	September,	105	58·30
	October,	88	69·79
	November,	70	73·76
	December,	76	63·90
	January,	117	71·35
	February,	103	81·82
	March,	105	90·45
	Total and Average,	1,083	69·28

Table I., which may be called the monthly table, contains two elements—the total number of patients admitted in each month, and the daily average of patients under treatment each month. It bears out, on the whole, the generally observed fact—that during the summer months there is a comparative immunity from fever. One striking difference will be noticed if we compare this table with the corresponding one for last year. For while, in the latter, the month of September appears as the minimal month—being, in fact, the only month in which the number of admissions fell below 100—in the present instance we find the number of admissions in September greatly in excess of those occurring in any of the three months either preceding or succeeding. The increase was principally due to smallpox and scarlatina.

The greatest number of admissions occurred in May and January. In the former case the number was only slightly in excess of what it had been in the preceding months, when the smallpox epidemic was still raging with full force; while in the latter it was evidently a temporary rise, such as is so constantly observed in connexion with extreme cold and damp.

The daily average number of patients under treatment was 69·28, against 114·67 in the previous year.

TABLE II.—*Showing the Number of Admissions of the Principal Diseases, and the Mortality of the Cases treated to a termination, for the year ending 31st March, 1880.*

	Typhus Fever	Enteric Fever	Relapsing Fever	Simple Fever	Intermittent Fever	Smallpox	Scarlatina	Measles	Pneumonia	Whooping Cough	Diarrhea	Erysipelas	Meningitis	
1879 April,	-	2	3	—	12	—	72	6	—	6	—	—	1	1
May,	-	5	2	—	4	—	90	4	1	4	—	—	—	3
June,	-	2	2	—	4	—	65	—	2	3	—	—	—	—
July,	-	4	2	—	7	—	29	—	2	2	—	1	—	1
August,	-	4	—	—	11	—	36	1	—	2	—	1	—	—
September,	5	1	—	—	8	—	71	14	1	—	—	—	—	—
October,	-	4	2	—	8	—	54	13	4	2	—	—	—	—
November,	5	1	—	—	3	—	37	12	2	4	—	—	—	—
December,	6	3	—	—	7	—	36	9	2	4	—	—	—	—
1880 January,	-	18	7	—	16	—	45	11	3	6	2	1	—	1
February,	-	20	6	—	16	—	34	13	3	4	—	—	2	—
March,	-	19	8	—	8	—	31	15	10	6	—	—	—	1
Total, 1879-80, .	94	37	—	104	—	600	98	30	43	2	3	3	7	
Total, 1878-79, .	142	60	—	173	4	1509	71	35	16	1	2	4	4	
Increase this year,	—	—	—	—	—	—	27	—	27	1	1	1	3	
Decrease this year,	48	23	—	69	4	909	—	5	—	—	—	—	—	
Died,	-	9	4	—	—	—	119	27	1	8	1	—	—	6
Mortality per cent.	9·5	10·8	—	—	—	19·8	27·5	3·3	18·6	50·0	—	—	85·7	

Bronchitis, 14; rheumatism, catarrh, 5 each; phthisis, 4; constipation, alcoholism, varicella, cynanche, 3 each; urticaria, debility, dyspepsia, 2 each; congestion of liver, eczema, marasmus, croup, colic, purpura, premature birth, lumbago, puerperal mania, scabies, heart-disease, puerperal fever, pyæmia, hectic fever, 1 each; no disease, 2.

The table itself contains a category of those diseases which it is the special function of a fever hospital to treat, while the note at the foot contains a list of those other cases which, from one cause or other, found their way into our wards. Considering, on the one hand, the ample accommodation in general hospitals in Dublin, and, on the other, the definite risk of infection accruing to anyone admitted into a fever hospital, it is distinctly our duty to refuse admission to all but fever cases. But those who have any practical experience of the question know how utterly impossible it is to sift, with any degree of certainty, true fever cases from those which simulate fever—hence the extreme difficulty in carrying out the principle in its completeness, more particularly when it has always been our rule never to refuse a doubtful case. In the present instance, however, the unusually small number of cases which have to be accounted for in the footnote is eminently satisfactory, and reflects the utmost credit on the Resident Medical Officer.

COMPARATIVE STATEMENT AS TO THE PREVALENCE OF DISEASE.

In all three classes of the continued fevers—typhus, enteric, and simple—there is a marked diminution in the number of cases, amounting together to 142. There was no case either of relapsing or of intermittent fever. The number of smallpox cases, while forming more than one-half of the total number of admissions, was but two-fifths of last year's number—or, in other words, showed a falling off of 909. Measles also showed a decrease of 5. The most marked increase is to be found under the heads scarlatina and pneumonia, being in each case 27. This brought up the total number of admissions in scarlatina to 98. The disease was, moreover, of a bad type, and the mortality reached 27·5 per cent.

RATE OF MORTALITY.

The total number of deaths was 186, or 17·58 per cent. of the admissions. Of these 119 were caused by smallpox. Last year the gross percentage mortality was 20·78. Last year the mortality in smallpox was 23·6 per cent.; this year it is 19·8 per cent. Last year the general mortality, exclusive of smallpox, was 14·0 per cent.; this year it is 12·4 per cent.—hence, both in smallpox and in the total of all other cases, the present year compares favourably with the preceding one.

CAUSES OF DEATH.

TABLE III.—*Showing the Deaths in each month, and the Diseases which caused them, during 1879-80.*

1879-80	Typhus Fever	Enteric Fever	Scarlatina	Pneumonia	Bronchitis	Smallpox	Meningitis	Measles	Phthisis	Congestion of Liver	Malaria	Purpura	Premature Birth	Heart-disease	Whooping Cough	Puerperal Fever	Total
April,	-	1	—	2	2	—	8	1	1	—	—	—	—	—	—	—	15
May,	-	—	—	3	—	—	16	2	—	—	1	—	—	—	—	—	22
June,	-	—	1	—	2	—	15	—	—	—	—	—	—	—	—	—	18
July,	-	1	—	—	—	—	2	1	—	—	—	1	—	—	—	—	5
August,	-	1	—	—	—	1	5	—	—	—	—	—	—	—	—	—	7
September,	-	—	—	2	—	—	19	—	—	—	—	1	—	—	—	—	22
October,	-	—	—	6	—	—	12	—	—	—	—	—	1	—	—	—	19
November,	-	1	—	7	—	—	9	—	—	—	—	—	—	—	—	—	17
December,	-	—	—	—	2	—	10	—	—	—	—	—	—	—	—	—	12
January,	-	1	1	3	—	—	10	1	—	1	—	—	—	1	—	—	18
February,	-	1	—	1	2	2	5	—	—	—	—	—	—	—	1	1	13
March,	-	3	2	3	—	1	8	1	—	—	—	—	—	—	—	—	18
Total,	-	9	4	27	8	4	119	6	1	1	1	1	1	1	1	1	186

The above table shows that, exclusive of smallpox, scarlatina was alone the cause of any seriously large number of deaths. The four deaths from enteric fever, however, raise the percentage mortality in that disease to 10·8, as against 8·3 last year, and 0 in 1877-78. The greatest number of deaths occurred in May and September, being in the latter case almost exclusively due to smallpox.

One of the most disheartening duties which falls to the lot of hospital officials is the tending of cases which are sent in when past all hope of recovery. The register of the hospital for the year contains a list of 32 admissions which come under this category. In such a list as this we must, of course, discriminate between those cases in which the hopelessness is due to the malignancy of the attack, and those in which it is due to the patient having been treated "outside" as long as there was any vestige of hope

of a favourable issue, and, when all hope had vanished, having been sent into hospital as the most convenient place to die. While, from a sanitary point of view, we do not for a moment question the application of the proverb, "better late than never," in these cases, we cannot but regret, on the one hand, that members of our profession should ever lend themselves to aid and abet in any such transaction; and, on the other, that in cases where the medical attendant does all he can to have the patient transferred to hospital at an early stage of the disease, he should not have more efficient assistance from the Legislature to effect what he deems not only necessary for the patient's life, but essential to the public safety. Such cases as these materially increase our death-rate; but as it is distinctly a function of the hospital to receive them, we have no right to murmur at this. We can only regret it for the injustice it does alike to the patients themselves, the public, and our nurses.

THE WEATHER.

The Meteorological Tables* have been drawn up with a twofold object—first, to enable the reader to institute a comparison between the conditions of weather during the past hospital year and the prevalence of disease in the same period; secondly, to afford a standard of reference to the principal meteorological factors in a long series of years. From Table IV. it appears that the spring of 1879 (the first quarter of the hospital year ending March 31, 1880,) was cold and backward; the summer was extremely cold, dull, and rainy; the autumn was dry; and the winter rather severe, but unusually dry. The depression of temperature which commenced on October 21, 1878, continued without interruption to the end of September. The deficit of temperature amounted, in November, 1878, to $6\cdot 4^{\circ}$, in December to $8\cdot 7^{\circ}$, in January, 1879, to $6\cdot 6^{\circ}$, in February $3\cdot 0^{\circ}$, in March to $1\cdot 0^{\circ}$, in April to $3\cdot 9^{\circ}$, in May to $3\cdot 2^{\circ}$, in June to $1\cdot 9^{\circ}$, in July $3\cdot 8^{\circ}$, in August to $2\cdot 5^{\circ}$, and in September to $1\cdot 5^{\circ}$, or a deficit of $3\cdot 9^{\circ}$ extending over the entire eleven months. Such continuous cold had certainly not occurred within living memory or in the present century, and it reacted most unfavourably on the public health, raising the bills of mortality in Dublin to an alarming height.

* Owing to the length of this Report, only the first of these tables is given in these pages. The principal facts embodied in the others may be found in the Dublin Journal of Medical Science for July, 1879, Vol. LXVIII., p. 33, *et seq.*

1879.

TABLE IV.—Abstract of Meteorological Data, from Observations taken at 40, Fitzwilliam-square, West, Dublin, by J. W. MOORE, M.D.

Month	Mean* Height of Barometer	Mean* Temp.	Mean* Humidity	Rainfall† in Inches	Rainy‡ Days	Mean* Direction of Wind	Remarks
January, -	" 30.008	35.0	81.5	1.714	10	S.E. & E.	Very wintry; the mean temperature 6° below the average.
February, -	29.500	39.7	88.5	3.706	23	E.S.E. & W. by N.	A very wet, dull, and rather cold month; the mean temperature some 3° below the average.
March, -	29.948	41.9	84.0	1.827	16	W. & E.	An averagely fine March; the first half dry and mild, the second half cold and dull.
April, -	29.707	44.0	82.0	1.997	17	E.N.E.	Generally cold and dull; mean temperature about 4° below the average.
May, -	30.057	49.4	75.0	2.048	23	N.W. & N.	Cold; the first fortnight marked by dry, parching N. winds and night frosts; the second half very unsettled and showery.
June, -	29.710	55.4	80.5	4.046	24	S.E. & W.S.W.	Very unsettled and showery; mean temperature 1.9° below the average.
July, -	29.779	56.6	79.2	4.187	24	W. & N.W.	Very inclement, with overcast skies, low temperature, frequent rains, and high winds.
August, -	29.770	56.9	83.0	3.704	19	W.S.W. & S.E.	Eminently changeable; mean temperature 2.5° below the average.
September, -	29.908	53.8	84.9	2.046	18	W., S.W., & W.	Changeable and showery; mean temperature 1.5° below the average.
October, -	30.148	49.5	88.4	1.320	14	W.N.W. & E.N.E.	Dull, generally mild, with a scanty and infrequent rainfall.
November, -	30.304	43.4	83.0	1.251	10	N.W. & E.N.E.	A fine month; atmospheric pressure very high; rainfall slight.
December, -	30.217	37.9	86.4	1.012	10	S.W. & W.	A cold, generally dry month; violent S. W. gales at close.
Means and Totals -	" 29.921	47.0 §	83.0	" 28.858	208	W. & E.S.E.	Spring very cold and backward; summer cold and rainy; autumn mild and dry, but dull; winter rather severe, but remarkably dry.

1880.

January, -	30.307	39.1	83.8	.563	8	S.E. & S.S.W.	Cold, dull, and foggy; rainfall and rainy days under the average.
February, -	29.647	44.4	83.8	2.581	17	S.W.	An open, windy month; scarcely any frost; frequent rains.
March, -	30.041	44.8	85.1	3.129	16	E.S.E. & S.E.	An open month, often damp and foggy; S. E. winds remarkably prevalent.

* The columns marked with an asterisk are the results of observations taken daily at 9 a.m. and 9 p.m. The readings of the Barometer are corrected and reduced to 32° at Mean Sea Level.

† The rainfall is recorded daily at 9 a.m.

‡ A "Rainy Day" is one on which at least .01 inch of rain falls.

§ The Mean Temperature, calculated from the maximal and minimal readings of the Thermometer by Kaemtz's Formula, was 46.4°.

SPECIAL DISEASES.

In considering in detail the various forms of febrile disease, it will be convenient to divide them into—I. The Continued Fevers; and II. The Exanthemata.

I. THE CONTINUED FEVERS.—Table V. contains the monthly and quarterly returns of admissions of typhus, enteric, and simple continued fever respectively, for the past year, together with an annual summary for ten years.

TABLE V.—Showing, by Months and Quarters, the Admissions of Typhus, Enteric, and Simple Fever into Cork-street Fever Hospital in the year ending 31st March, 1880; also the Monthly Mean Temperature; and a Summary for Ten Years.

Mean Temp. Fahr.	Month and Year	Typhus Fever		Enteric Fever		Simple Fever		Annual Totals
		Monthly Total	Quarterly Total	Monthly Total	Quarterly Total	Monthly Total	Quarterly Total	
43·7	April, 1879	2		3		12		
47·6	May, -	5		2		4		
54·9	June, -	2		2		4		
			9			7		
56·3	July, -	4		2		7		
56·6	August, -	4		0		11		
53·3	September, -	5		1		8		
			13			3		
49·0	October, -	4		2		8		
43·1	November, -	5		1		3		
37·0	December, -	6		3		7		
			15			6		
39·0	January, 1880	18		7		16		
44·2	February, -	20		6		16		
44·4	March, -	19		8		8		
			57			21		
	Total, -	—	94	—	37	—	104	235

Summary for Ten Years.

Mean Temp. Fahr.	Years	Typhus	Enteric	Simple	Totals
49·4	1870-1	877	118	641	1,136
49·8	1871-2	173	187	368	718
48·8	1872-3	130	75	284	489
49·5	1873-4	113	77	173	363
49·1	1874-5	112	83	229	424
48·9	1875-6	109	47	162	318
49·4	1876-7	100	55	200	355
48·8	1877-8	134	51	220	405
47·5	1878-9	142	60	173	375
47·4	1879-80	94	87	104	235

By reference to this latter it will be seen, as already mentioned, that the admissions in each of the three forms of fever was less during the past year than in any one of the preceding nine.

(a.) *Typhus*.—The statistics of the cases of typhus are particularly worthy of notice. Of a total of 94 cases, 57 were admitted in the months of January, February, and March, in nearly equal numbers for each month. This number exceeds by 11 the greatest number of admissions in any quarter of the five years under consideration, while in each of the three preceding quarters of the present year the number of admissions was not only greatly below the average, but markedly less than in any quarter of the preceding four years. The immunity from typhus in the first three quarters of the hospital year was the reverse of what was anticipated; for, as alluded to in last year's report, an increase in typhus cases is frequently observed when a smallpox epidemic shows signs of waning. The increase in the last quarter was almost exclusively due to an epidemic of this disease which has occurred in the North Dublin Union, and which, we understand, has been confined to the female department. From this source alone 40 out of the 57 cases came. The pressure on our accommodation in the wards usually devoted to typhus became so great that it was found necessary to open the sheds—erected for smallpox in 1878—for typhus patients. Not a single case of variola occurred amongst either the patients or nurses during their sojourn in this building. This fact is particularly interesting and satisfactory, as it removes any misgivings which we had as to the capability of disinfecting a wooden building of the kind. The walls of this building consist of a double sheeting of deal, the interval being filled with pine sawdust. It is worthy of consideration whether a building thus constructed may not have special powers of resisting infection—whether, in fact, the immunity from smallpox infection observed here may not, in some measure, be due to the antiseptic power of the pine sawdust.

The disparity between the number of male and female cases is due to the epidemic above alluded to as occurring in the North Dublin Union. The average mortality this year is composed of two very unequal elements—that of male cases being 4·7 per cent., and that of females being 10·9 per cent. Last year these two items were 17·0 and 18·3 per cent. respectively, giving a total of 17·6 per cent. The deaths include that of one of our nurses, aged thirty-five, who died on the seventeenth day of her illness. Shortly before death her temperature was 107·8° Fahr.

TABLE VI.

Showing the Number Admitted and Dead of Typhus Fever, of both Sexes, and at different Ages, for the year ending 31st March, 1880.

MALES				FEMALES			
Ages	No. Admitted	No. Died	Mortality per cent.	Ages	No. Admitted	No. Died	Mortality per cent.
Under 5 - -	—	—	—	Under 5 - -	6	—	—
5 and under 15	5	—	—	5 and under 15	24	2	8·3
15 " 20	6	—	—	15 " 20	14	1	7·1
20 " 40	8	1	12·5	20 " 40	21	4	19·0
40 " 60	2	—	—	40 " 60	8	1	12·5
60 " 80	—	—	—	60 " 80	—	—	—
Total, - -	21	1	4·7	Total, - -	73	8	10·9
Total No. Admitted,	94	Total No. Died, - -	9	Average Mortality,	- 9·5		

TABLE VII.

Showing the Number Admitted and Dead of Enteric Fever, of both Sexes, and at different Ages, for the year ending 31st March, 1880.

MALES				FEMALES			
Ages	No. Admitted	No. Died	Mortality per cent.	Ages	No. Admitted	No. Died	Mortality per cent.
Under 5 - -	—	—	—	Under 5 - -	—	—	—
5 and under 15	4	—	—	5 and under 15	3	1	33·3
15 " 20	9	1	11·1	15 " 20	6	—	—
20 " 40	7	1	14·3	20 " 40	5	1	20·0
40 " 60	2	—	—	40 " 60	1	—	—
60 " 80	—	—	—	60 " 80	—	—	—
Total, - -	22	2	9·0	Total, - -	15	2	13·3
Total No. Admitted,	37	Total No. Died, - -	4	Average Mortality,	- 10·8		

(β.) *Enteric Fever*.—Of the small number of cases admitted more than half occurred in the last quarter of the hospital year, hence contemporaneously with the typhus epidemic above alluded to. Two males and two females died, raising the percentage mortality to 10·8, as against 8·3 last year, and 0 the year before. One of the fatal cases was that of a young woman, aged twenty, who died on the 17th March, apparently on the eighteenth day of an attack of enteric fever, characterised by unusually severe nervous symptoms. A few minutes before death the temperature in the axilla registered 109·8°.

(γ.) *Simple Continued Fever*.—There is nothing worthy of special note as regards the cases of simple continued fever; 104 cases were admitted, and no death occurred.

II. THE EXANTHEMATA.—A glance at Table II. will suffice to show that, both as regards numbers and severity, the cases of smallpox and scarlatina formed by far the most serious item in our year's work.

(a.) *Scarlatina*.—During the three summer months, June, July, and August, we were practically free from scarlatina; but in September the admissions became very numerous, and throughout the entire autumn, winter, and early spring, we have had an unusually heavy epidemic of the disease. The total number of admissions of patients suffering from scarlatina was 98, of whom 27 died. One of these deaths was not attributable—directly, at least—to scarlatina, the immediate cause of death having been an attack of smallpox which developed during convalescence from the scarlatina. On the other hand, one of the several cases of smallpox which contracted scarlatina while in hospital died of scarlatina.

Reference to Table VIII. will show that 22 out of the 27 deaths occurred in patients under 15 years of age. The real fact is, however, that the vast majority of these deaths occurred in children under 7 years of age; and, consequently, they show unequivocally the extreme fatality of the disease in early childhood.

Again, our statistics would tend to show that the disease is particularly fatal in certain families. Thus, 3 fatal cases occurred amongst the children of one family, whilst 2 occurred in each of three other families. The general type of the disease was that of *Scarlatina anginosa*.

TABLE VIII.

Showing the Number Admitted and Dead of Scarlatina, of both Sexes, and at different Ages, for the year ending 31st March, 1880.

MALES				FEMALES					
Ages	No. Admitted	No. Died	Mortality per cent.	Ages	No. Admitted	No. Died	Mortality per cent.		
Under 5 -	9	4	44·4	Under 5 -	10	4	40·0		
5 and under 15	25	6	24·0	5 and under 15	26	8	30·7		
15 "	20	5	25·0	15 "	20	5	—		
20 "	40	5	20·0	20 "	40	12	16·6		
40 "	60	—	—	40 "	60	1	—		
60 "	80	—	—	60 "	80	—	—		
Total,	-	44	13	29·5	Total,	-	54	14	25·9
Total No. Admitted, -	98	Total No. Died, -	- 27	Average Mortality,	27·5				

The most serious complications were as follows:—Convulsions, acute nephritis, cervical bubo, the same associated with pyæmia, and hemiplegia. Each proved fatal in one case. The hemiplegia occurred in the case of a man aged thirty-three, on the sixth day of his illness, and caused his death on the ninth.

(B.) *Measles.*—Our statistics of measles, if taken as an index as to the prevalence of the disease throughout the city, would greatly mislead. Reference to the Quarterly Return of the Registrar-General shows that no less than 90 deaths occurred in the quarter ending 31st March, 1880. This must indicate a very serious and widespread epidemic; for, although measles in the homes of the poor is frequently a source of considerable augmentation to the death-rate, it is a disease which amongst the upper classes and in hospitals is characterised by a very low rate of mortality. Yet during this quarter but 16 cases applied for admission into Cork-street Fever Hospital. The total number of cases admitted throughout the year was only 30, of which but 1 was fatal.

With such facts as these, we can only regret that the advantage of hospital treatment in cases of measles should be so much neglected by the poor of Dublin.

TABLE IX.

Showing the Number Admitted and Dead of Measles, of both Sexes, and at different Ages, for the year ending 31st March, 1880.

MALES				FEMALES			
Ages	No. Admitted	No. Died	Mortality per cent.	Ages	No. Admitted	No. Died	Mortality per cent.
Under 5 -	-	5	—	Under 5 -	-	2	1
5 and under 15	10	—	—	5 and under 15	5	—	—
15 „	20	3	—	15 „	20	—	—
20 „	40	2	—	20 „	40	3	—
40 „	60	—	—	40 „	60	—	—
60 „	80	—	—	60 „	80	—	—
Total,	-	20	—	Total,	-	10	1
Total No. Admitted, - 30		Total No. Died, -	1	Average Mortality, - 3·8			

(y.) *Smallpox*.—Six hundred cases of smallpox were admitted during the year, and 119 cases died. Grave as these facts are, they indicate a very marked improvement on what we had to report last year—namely 1,509 admissions and 357 deaths; and not only are the numbers less, but the average mortality, which last year reached the very unsatisfactory rate of 23·6 per cent., has this year fallen to 19·8 per cent.

TABLE X.

Showing the Number of Cases admitted per Month to Cork-street Hospital since the commencement of the present Epidemic.

	1876-77.	1877-78.	1878-79.	1879-80.
April, -	-	—	175	72
May, -	-	—	178	90
June, -	-	—	167	65
July, -	-	—	168	29
August,	-	1	86	36
September,	-	0	48	71
October,	-	0	54	54
November,	-	3	76	37
December,	-	5	152	36
January,	-	8	237	45
February,	-	5	94	34
March,	-	7	74	31

Table X. gives the monthly return of admissions since the commencement of the present epidemic. From this it will appear that there has been, on the whole, a steady decrease in the number of admissions throughout the hospital-year. In September, it is true, with a mean temperature of 53·3° Fahr., there was a somewhat unaccountable rise in numbers—one which seems to run counter to the view, founded on so many independent observations, and alluded to in last year's Report—namely, that smallpox is essentially a disease of cold weather, and that a mean temperature of over 50° Fahr. is unfavourable to its development and spread. The temporary increase in January was only such as our experience had taught us to expect. On the whole, then, we may conclude that the epidemic has shown distinct evidence of decline; but we cannot shut our eyes to the fact that the occurrence within a year of 600 cases of so infectious a disorder as smallpox, must necessarily be the source of a widespread infection, from the effects of which it would be futile to expect that we could be speedily free.

TABLE XI.

Showing the relation between the Type of the Disease and the Mortality.

From 1st April, 1879, to 31st March, 1880.					
Varieties	Number of Cases	Proportion per cent. of all the cases	Recovered	Died	Mortality per cent.
Discrete - - -	346	57·6	345	1	0·2
Confluent - - -	185	30·8	122	63	34·0
Malignant - - -	69	11·6	14	55	79·7
Total - - -	600	100·0	481	119	19·8
From 1st April, 1876, to 31st March, 1880.					
Varieties	Number of Cases	Proportion per cent. of all the cases	Recovered	Died	Mortality per cent.
Discrete - - -	1,349	56·2	1,338	11	0·8
Confluent - - -	789	32·8	483	306	38·7
Malignant - - -	266	11·0	60	206	74·4
Total - - -	2,404	100·0	1,881	523	21·7

The character of the disease was, on the whole, distinctly milder

than during the previous twelve months. The proportion of discrete cases was almost identical with that of last year, being 57·6 per cent. of the total admissions against 57·8 per cent. There was but 1 death recorded under this category; and this was, in reality, due to scarlatina, and not to smallpox. It was the case of a young woman, aged nineteen, who, when convalescent from discrete smallpox, contracted scarlatina, to which she succumbed. The other two categories, confluent and malignant (which latter includes the badly purpuric and haemorrhagic cases), were also similar to last year, so far as the actual proportion of cases, but they differ markedly as regards the percentage mortality—that in the confluent cases falling from 46 per cent. to 34 per cent., while in the malignant it rose from 76 per cent. to 79·7 per cent. These details will be seen by referring to Table XI., as well as the summary of the statistics for the entire epidemic.

TABLE XII.

Showing the Relation between the Sex of the Patients, the Type of the Disease, and the Mortality.

SEX	DISCRETE			CONFLUENT			MALIGNANT			TOTAL			
	Total	Died	Mortality per cent.	Total	Died	Mortality per cent.	Total	Died	Mortality per cent.	Total	Recovered	Died	
	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	
Males	192	—	—	107	35	32·7	39	34	87·0	338	269	69	20·4
Females	154	1	0·6	78	28	35·8	30	21	70·0	262	212	50	19·0
Total	346	1	0·2	185	63	34·0	69	55	79·7	600	481	119	19·8

From 1st April, 1879, to 31st March, 1880.													
Males	759	5	0·6	436	172	39·2	149	113	75·8	1,344	1,054	290	21·5
Females	590	6	1·0	353	134	37·9	117	93	74·9	1,060	827	233	21·9
Total	1,349	11	0·8	789	306	38·7	266	206	74·4	2,404	1,881	523	21·7

Table XII. gives a somewhat similar, though more elaborate classification, and is intended to show the manner in which the element of sex affected the question. The total average mortality

this year is slightly greater for males than females, being 20·4 per cent. against 19 per cent., whereas last year it was greater in females than males—viz., 24·8 per cent. against 22·7 per cent. If we compare the tables of this year with those of last year we find that the difference occurs under the head of malignant cases, this item in last year's table being—

Males, 70 per cent.

Females, 84 "

while this year it is—

Males, 87 per cent.

Females, 70 "

Why the increased mortality should appear in the case of males it is impossible to say. On the other hand, the lower rate in females may be explained by the fact that puerperal cases showed a markedly lessened tendency to assume the "malignant" type, while abortion and menorrhagia, often the first symptom of "malignancy," were much less frequently met with. The extreme cold of January, 1879, seemed to be an important element in the production of menorrhagia. There was scarcely a female case admitted at that time that did not suffer more or less from it; and the female wards assumed, relatively to the male, a much graver aspect then than at any other period of my duty in connexion with the epidemic.

TABLE XIII.

Showing the relation between Vaccination, the Sex of the Patients, and the Type of the Disease.

From 1st April, 1879, to 31st March, 1880.

	MALES			FEMALES		
	Total	Confluent	Per cent.	Total	Confluent	Per cent.
Vaccinated - - -	296	79	26·7	230	59	25·6
Unvaccinated - - -	42	28	66·6	82	19	59·3
Total - - -	338	107	31·6	262	78	29·8

From 1st April, 1876, to 31st March, 1880.

Vaccinated - - -	1,108	290	26·1	848	225	26·5
Unvaccinated - - -	236	146	61·9	212	128	60·3
Total - - -	1,344	436	32·4	1,060	353	33·3

TABLE XIV.

Showing the Relation between Vaccination and the Prevalence and Severity of Smallpox.

	DISCRETE			CONFLUENT			MALIGNANT			TOTAL		
	Total	Died	Per cent. Mortality	Total	Died	Per cent. Mortality	Total	Died	Per cent. Mortality	Total	Died	Per cent. Mortality
Vaccinated -	335	1	0·3	138	29	21·0	53	39	73·5	526	69	13·1
Unvaccinated	11	-	—	47	34	72·3	16	16	100·0	74	50	67·5
Total -	346	1	0·2	185	63	34·0	69	55	79·7	600	119	19·8
Per cent. vaccinated in each class	}		96·8	74·6			76·8			87·6		

From 1st April, 1879, to 31st March, 1880.

Vaccinated -	1,278	10	0·7	515	112	21·7	163	113	69·3	1,956	235	12·0
Unvaccinated	71	1	1·4	274	194	70·8	103	93	90·2	448	288	64·2
Total -	1,349	11	0·8	789	306	38·7	266	206	77·4	2,404	523	21·7
Per cent. vaccinated in each class	}		94·7	65·2			61·2			81·3		

Tables XIII., XIV., and XV. contain the statistics which we annually give as to the manner in which vaccination modifies the type and mortality of the disease. Of all the cases vaccinated and unvaccinated, males and females, a greater proportion were confluent this year than last. Again, the average mortality of both vaccinated and unvaccinated cases was a shade higher this year than last. Probably both these facts are due to the lighter cases having been treated at home, people having become inured to the danger of infection. The one great fact, however, remains unaltered—that while more than two-thirds of unvaccinated cases die, seven out of every eight of the vaccinated cases recover. The

gross average mortality is markedly less this year, being 19.8 per cent. against 23.6 per cent. of last year. This is seen to be due to the fact that the relative proportion of vaccinated cases treated within the year was much greater than last year, being 87.6 per cent. against 79.3 per cent.

TABLE XV.

Showing the Relation between the Ages of the Patients, Vaccination, and Mortality.

From 1st April, 1879, to 31st March, 1880.							
Ages	Total	Per cent. at each Age	Vaccin- ated	Per cent. Vaccin- ated	Died	Mortality per cent.	
Under 5 - - -	52	8.6	24	46.3	35	67.3	
5 and under 10 - -	79	13.2	59	74.6	13	16.4	
10 , 15 - -	66	11.0	62	93.9	5	7.5	
15 , 20 - -	140	23.4	134	95.7	13	9.3	
20 , 30 - -	186	31.0	177	95.1	27	14.5	
30 , 40 - -	45	7.5	41	91.1	16	35.5	
40 , 50 - -	20	3.3	18	90.0	6	30.0	
50 and upwards - -	12	2.0	11	91.6	4	33.3	
Total	600	100.0	526	87.6	119	19.8	

From 1st April, 1876, to 31st March, 1880.

Under 5 - - -	174	7.2	62	35.6	114	65.5
5 and under 10 - -	252	10.4	177	46.4	59	23.4
10 , 15 - -	317	13.2	279	88.0	30	9.4
15 , 20 - -	533	22.1	477	89.4	55	10.3
20 , 30 - -	767	31.9	665	86.7	155	20.2
30 , 40 - -	231	9.6	192	83.1	71	30.7
40 , 50 - -	89	3.8	74	83.1	25	28.0
50 and upwards - -	41	1.8	30	73.1	14	34.1
Total - - -	2,404	100.0	1,956	81.3	523	21.7

It will be noticed that of those under 5 years of age, not one-half were vaccinated; of those between 5 and 10, about 3 out of every 4 were vaccinated; while at all other ages the proportion of vaccinated cases was over 90 per cent. Of those under 5 years of age the mortality reached 67·3 per cent., the fact being that scarcely a single child who is brought into hospital with the disease, and who had not been vaccinated, recovers. Under the head "Vaccinated" in this category are numerous cases where the operation of vaccination had only just been performed, subsequently, no doubt, to the inception of the variolous infection.

But four cases that had been re-vaccinated came under treatment. They were all light, and made speedy recoveries.

Of the 74 unvaccinated cases 50 died. But the high death-rate, fearful as it is, is not the only calamity which the experience of this epidemic proves to be specially the fate of the unvaccinated. Of the whole 74 cases there was scarcely one that could be called really light. Of the 24 that recovered one-half were detained in hospital for a period of from one to three months, as will be seen by Table XVI.; and boils, abscesses, ophthalmic trouble, &c., occurred in these cases with a frequency and severity altogether out of proportion either to their numbers or even the apparent severity of the primary attack.

TABLE XVI.

Protracted Duration in Hospital of Non-Vaccinated Recoveries.

Registry No.	Days in Hospital	Registry No.	Days in Hospital
19	64	583	34
23	38	594	60
75	81	624	40
263	47	837	61
486	57	857	a
569	83	980	b

The experience of the earlier part of the epidemic led my colleague, Dr. J. W. Moore, and myself to the conclusion that, however true it may be in general that the presence of an attack

^a In hospital still; admitted January 28th.

^b " " March 1st.

of one form of zymotic disease tends to afford protection against the infection of another, it is certainly not true of smallpox and scarlatina. The experience of the past year not only corroborates this view, but forces us to the belief that a person affected with smallpox is, *ipso facto*, specially prone to take scarlatina, and *vice versa*. The scarlatina cases have been treated on the lower flat of the new house, while the smallpox has been in the epidemic house. The utmost care has been taken to isolate the smallpox cases; and there is every reason to believe that the separation of smallpox from scarlatina must have been every whit as complete as from any other disease. Yet numerous cases admitted with scarlatina have, about a fortnight after their admission, developed smallpox, and similarly smallpox cases have developed scarlatina. Cases of scarlatina admitted by mistake for a night into the smallpox house, spread the infection of scarlatina in that house; and if removed to the scarlatina wards, probably develop smallpox in a fortnight, and spread the infection of variola there. In addition to our experience of infection occurring within the hospital we have had cases of both kinds from without. The number of cases of variola occurring in the convalescence of scarlatina has been great enough to enable us to observe that the disease is characterised by a slow papular development, and that, consequently, we must not make so favourable a prognosis on the first appearance of the eruption as we should be inclined to do in an ordinary case.

CONCLUSION.

In conclusion we have again the satisfaction of being able to record that no untoward accident, nor anything calling for public investigation, has occurred throughout the year.

INFLUENCE OF CHANGE OF POSITION OF THE BODY ON ITS TEMPERATURE.

SASSESKI shows that the elevation of the upper extremities, and still more of the lower extremities, increases the frequency of the pulse and of respiration, as well as the temperature of the body (taken either in the mouth, the rectum, or the axilla) as much as from 2° to 3.2° , whilst that of the hands falls to 1.5° . These changes are more marked among the sick, especially those attacked with typhus, than among the healthy. The more advanced is the febrile condition, the more the nutrition of the heart is altered, and the more sensitive it becomes to changes in the position of the extremities.—*Petersburg med. Wochensck.*, 1879.

K. F.

THE BOSTON
SOCIETY FOR
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OBSERVATION

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Antiseptic Surgery. By Wm. MAC CORMAC, M.A., F.R.C.S.E. & I., M.Ch., *Honoris Causa*; Surgeon and Lecturer on Surgery, St. Thomas's Hospital. London: Smith, Elder, & Co., 15, Waterloo-place. 1880. 8vo. Pp. 286.

We are glad that Mr. Mac Cormac has acted upon the suggestions of his friends in publishing the address and the discussion upon it, which occupied the attention of the South London Branch of the British Medical Association at the close of last year. In the able observations which he then made he raised the question of the efficacy of the treatment of wounds as devised by Mr. Lister, confining himself chiefly to the results obtained by practical surgeons in the use of it, not only in England but in Germany. A challenge of this sort was certain to be accepted by those who either altogether doubt the truth of the Listerian doctrines, or believe that the method, although good, is no better than many others in vogue. The discussion which followed the reading of the paper gave opportunity for the expression of opinions on all sides, and having them thus recorded, corrected and sanctioned by their authors, a judgment may be formed by impartial outsiders.

Mr. Mac Cormac has not, however, confined himself to the re-issue of the report of that most interesting debate, but has added "a short statement of the antiseptic theory, a description of the materials employed in carrying it out, and some applications of the method to operations and injuries in different regions of the body, and to wounds received in war." In this respect the book takes an unoccupied place. Mr. Lister has not laid before the profession in any collected form the principles and practice which he advocates, and which, whatever may be said of their verity, have in a few years transformed the whole aspect of the treatment of wounds, and won crowds of adherents. He has contented himself with making numerous communications to the journals, but these are often beyond the reach of the practitioner, and to this we ascribe

much of the ignorance which still exists as to his marvellous successes. For this reason, as for others, we are glad to welcome this first book on antiseptic surgery by a skilful surgeon and a ready writer, who adds to all the enthusiasm of an earnest disciple.

The whole history of wounds appears to point very clearly to the conclusion that certain impurities in the air having access to raw surfaces tend to cause putridity in the discharges, and thus to endanger the patient's life by giving origin to septicæmia or pyæmnia. It has been over and over again shown that while filtered air does not produce decomposition in prepared organic fluids, ordinary air does, and that the process of filtering, or whatever effective purifying plan may be adopted, is the essential cause of the difference in result. Those who hold the germ-theory believe that putrefaction depends upon the presence of organisms called bacteria, and that if these can be rendered impotent no putrefaction will occur. The belief depends upon more than theory, for these organisms are visible, experiment has shown their influence, and their existence and mischievous character cannot be got rid of by a mere negation.

It may also be demonstrated that these germs cannot live in a 1 in 20 solution of carbolic acid; and the conclusion is irresistible that if it be true that these bacteria in some way cause putrefaction, it is not only prudent but obligatory that the surgeon should use such safeguards as have been found most efficient. It has been urged, on the other hand, that under antiseptic dressings organisms do occasionally occur, and this is undoubtedly so; but this may be accounted for either by the ineffective application of the dressings, or the existence of micrococci. In the London Pathological Transactions for 1879, Mr. Cheyne devotes a most valuable paper to the discussion of the latter condition. The experiments were conducted with the aid of Professor Gerald Yeo. Micrococci were found under dressings and in wounds, but when introduced into prepared cucumber infusions, under the spray, they produced hardly any change. In wounds "treated in the ordinary way bacteria were almost always found, as well as micrococci. In four cases treated antiseptically bacteria were found, but in all their presence was indicated by disagreeable smell or by symptoms of local or constitutional disturbance." Yeo injected the jugular veins of a rabbit with micrococci, and of another with bacteria; the first was unaffected, the second died with the usual symptoms on the fourth day. Cheyne injected himself twice with from one to five minims

of fluid containing micrococci, at least as numerous as two millions in each minim, without the production of abscesses, and the conclusion at which he arrives is that micrococci, wherever obtained—from air, from tap-water, or from an unopened abscess—are harmless. We commend this paper to those interested in the subject.

The objection that other methods give as good results has not, we think, been sustained. More important is it to know, however, whether the principle is right, and whether the practice is properly adapted to it; for if this be so, the cause of disappointing results must be sought for in the defective carrying out of the method. The first lesson to learn is, extreme care and the strictest attention by the operator to every detail. Unfortunately this lesson is hard to learn, and consequently there is failure. Hands imperfectly or not all protected by carbolised solution; instruments taken out of the bath and never returned there, but allowed to lie beyond the range of the antiseptic spray; defectively prepared sutures; gauze which has become exhausted by exposure and age—are often brought into contact with a wound which is supposed to be pure, when in reality the surgeon has done his best to defeat his object. We have frequently seen the carbolised spray playing anywhere but over the wound, or shot from a hand machine in spasmotic jets, with intervals of several minutes; and once we saw a patient under operation for an hour, while the spray was only condensed steam, sweeping swarms of bacteria into the open wound. Very often, again, the dressing is too small, or is not secured at the margins, or is allowed to remain on for many hours after the discharge has appeared at the edge, and thus washed away nearly all the carbolic acid in the gauze. In such cases it would be almost better not to use the method at all, because the results, so brought about by neglect, discourage some and may make unbelievers of many.

That the antiseptic treatment of wounds is not a mere fashion was abundantly testified to by the speakers at the debate. The leaders of English surgery, some of whom did not accept in every point the details of the system, were free enough in confessing its advantages. Mr. Jonathan Hutchinson said—"I have seen large abscesses opened under the spray and dressed with the gauze, which did not suppurate further, and which behaved in a way wholly unexampled under the older methods of dressing." Sir James Paget said—"The reports which we have heard of the use of the complete antiseptic treatment in certain foreign hospitals make it

impossible to doubt that it is absolutely potent for the repression of nearly all the fatal influences of foul air and the infective diseases of wounds. . . . A few years ago I believed that I had never seen a patient recover after the opening of a lumbar or a psoas abscess with a free incision; I could not remember one who had not died before the opened abscess healed. Of late years I have known such abscesses opened with complete impunity under anti-septic treatment, and there has seemed nothing but this treatment to account for the difference of result."

This experience of the fatality of opening large chronic abscesses, such as described, accords with that of all surgeons whose recollection goes back a very few years. So great used to be the dread of meddling with them that they were altogether let alone, in the hope that the inevitable result might be staved off as long as possible. There can be no doubt whatever that under successful antiseptic treatment we are now able to evacuate a large psoas or lumbar abscess without this being followed by any of the symptoms which otherwise would occur, and without any re-formation of pus. The dressing is often tedious, for a serous discharge will continue during the closing of the cavity, but the end is a good payment for the labour. Here especially is it necessary that strict care should be taken. The drainage-tubes should be large—"double-barrelled is an excellent form in many cases"—and "when the tube is removed for the purpose of cleansing or shortening, a fold of moist gauze may be placed over the opening." "In large abscesses the layers of folded moist gauze should be soaked in five per cent. solution before application, and the quantity used should be large in proportion as the discharge is copious." Mr. Mac Cormac gives several examples, of which this is one:—

"A large abscess which I recently opened was in the lumbar region in a boy. After the first day the discharge was almost nil, and in four or five days the drainage-tube was observed to be filled with grey pultaceous matter. The tube was removed. There was no further discharge; the fever and pain disappeared after the first day; there was a certain degree of carbolism, but not of any alarming extent. The lad soon recovered."

In connexion with this subject of abscesses some interesting observations are made by Mr. Cheyne, in the paper already referred to, which go further to support the theory by showing why it is that septicæmia so seldom follows from an unopened abscess, while it may follow, as has happened in our own practice, after exposure

of the fluids to air. In a number of chronic abscesses which he examined he could find no organism of any kind, his investigations thus agreeing with Billroth's. Prepared fluids were inoculated with pus from thirty-two acute abscesses. In twenty-five cases no organisms were found, while in the other seven micrococci, but no bacteria, were present.

Of the cases met with in every-day surgery there is no class in which we get better results than in compound fractures. Cases which formerly would have been unhesitatingly doomed to the knife now recover rapidly, and very often without a disturbing symptom. The author may here be quoted:—

"The first thing in dealing with a case of compound fracture is thoroughly to cleanse the entire limb with soap and water, certainly every part of it which may be included in the subsequent dressings, and afterwards wash it with strong carbolic solution. An anaesthetic is necessary, as the manipulations are often very painful and protracted. The wound must in recent cases be thoroughly irrigated with two and a half per cent. solution, or if it have been exposed for several hours, with a five per cent. solution. If the external wound be too small to allow of the most complete irrigation, it should be enlarged. The disinfection of the whole wound-cavity is the most important part of the practice, and one or several counter-openings may require to be made in order to wash and completely disinfect every recess. It must be thoroughly well done. In some of the slighter cases the external wound may be closed; but more frequently drainage-tubes must be inserted, and the fractured limb having been adjusted, and antiseptic dressings applied, it is at once put up in a suitable splint or apparatus.

"In those cases where the wound-cavity is large, or when it has been exposed for some hours before the patient has come under treatment, the washing out must be repeatedly made with the stronger carbolic solution, and drainage will be invariably necessary, as the amount of secretion afterwards is considerable. Drainage is also required in all cases where the tendency to bleed is not completely checked—in short, it must be employed in a very large majority of the cases. When the bone has pierced the skin it should be disinfected in the same way as the soft parts. Necrosis does not appear to follow any the more on this account. Only when a fragment interferes with the 'setting' of the fracture, or is completely detached, ought it to be removed. Any extensive removal of bone is prejudicial and unnecessary, for even very loosely connected pieces will re-unite; while an extensive removal of bone renders delayed or non-union very likely to occur. Counter-openings are made with a double object. When the wound-cavity is large and irregular they

facilitate its complete disinfection in the first instance, and its thorough drainage afterwards. There should be no hesitation in making them either of sufficient number or size, where the seat of fracture cannot be completely disinfected through the original wound. It is undesirable to pass a drainage-tube between the fragments of the fractured bone unless drainage cannot otherwise be satisfactorily accomplished. In the instances, however, in which this has been done it has not induced necrosis—an occurrence the probability of which under any circumstances is greatly diminished by the antiseptic method."

Mr. Holmes, in the "St. George's Hospital Reports," Vol. IX., gives the result of 162 cases of compound fracture treated in that institution from 1865 to 1878. Of the fatal cases, 21, or rather more than one-half, died from pyæmia. In 33 cases treated antiseptically in the same place, only 1 died from pyæmia. Volkmann has had in succession 75 cases of compound fracture without a death. This reference to figures suggests the observation that Mr. Mac Cormac has done good service in resenting with some warmth the depreciatory remarks of Mr. Holmes regarding the force of foreign statistics. The German school of surgery is one which has done more than most others to advance the science; and it has in no respect shown more enlightenment and energy than in the adoption and application of the Listerian principle.

It has been said of the antiseptic method that it has often induced surgeons to attempt operations which would have been better left untried. So far as the statement is applicable at all, it is a high testimony to its comparative safety. It does not claim, as some seem to think, to accomplish what is plainly impossible; but it has enabled operative proceedings to be carried out which have not hitherto been practicable. To this extent, in its competition with the so-called "modified methods," its position is unassailable. Joints have been opened and washed out, with the result that their functions have been perfectly restored. Thus Schede (*Centralblatt für Chirurgie*, No. 42, 1877) recommends a plan that he has found very successful in five cases of fractured patella. The fragments are often kept apart by effusion of fluid, and in such circumstances he has punctured the joint, washed out the cavity, and brought the pieces of bone together, with the result that osseous union was procured in three, and close fibrous union in two, "in consequence of these two having been allowed to make too early a use of the joint." Trendelenberg has obtained bony union in fractured patella by cutting down on the fragments after

eight weeks, paring the edges, and bringing the parts together. Only three dressings were required. The same results have been obtained by other surgeons in England and in Germany. In the removal of loose cartilages from the knee-joint, Square, of Plymouth, has had a series of twenty-four operations performed in succession, with complete success.

The chapter on Military Surgery discusses the advantages which Listerism offers in the treatment of wounds received on the battle-field. The difficulties in the way of its use are considerable, but Mr. Mac Cormac, who has himself large experience in this direction, shows how much may be gained even by the secondary use of antiseptics. There is no chapter in the book which is of greater value than this, since it deals with that unfortunate state of things in which wounds of the worst sort are inflicted in greatest number, and with the least means of dealing with them. Of course it is impossible that an army surgeon at the first line should be attended by an orderly carrying a steam spray, but it is quite possible, as Mr. Mac Cormac clearly shows, that he should be able to apply such simple antiseptic dressings as will preserve the wound from infection until it can be fully protected at the base hospital. The experience of Surgeon-General Cammerer, of the German army, who acted as a volunteer on the Russian side in the late war, shows what can be done even under very hopeless circumstances. When he took charge of his hospital, pyæmia, septicæmia, typhus, and tetanus were present, but after the adoption of the antiseptic dressings no case of blood-poisoning occurred.

"Three wounds which involved the knee and two which implicated the elbow-joint recovered like simple wounds of the soft parts. One of the former cases was a perforation by bullet, *Schussloch*, of the condyles of the femur. In six weeks the patient was able to get about with a movable joint, and only a small superficial surface to heal. In a second case the bullet remained lodged in the bone, but the patient recovered in a month with a movable knee-joint. The third made a simple recovery after a transverse wound through the superior synovial pouch."

Some of the most interesting successes have been achieved in the surgery of the abdomen, in regard to hernia and ovarian tumour. The practicability of radical cure of the first-named has been demonstrated, especially where it has been found necessary to operate for strangulation of the tumour. Schede (*Op. cit.*, Nov., 1877) drew down the neck of the sac, placed a ligature upon it, and

then removed all below the ligature. In another case, where this was not feasible, the sac was laid open throughout its entire extent, and a drainage-tube inserted into the abdominal cavity. "The cavity granulated under antiseptic treatment, and in forty-three days the patient was cured by the obliteration of the sac." The relation of the Listerian method to the success of ovariotomy has been sufficiently established.

In other procedures it has been not less effective, especially in the treatment of divided nerves and tendons. A case reported by Dr. Kölliker may be quoted from Mr. Mac Cormac's book:—

"The patient, a boy of twelve years of age, had pushed his hand through a thick pane of glass. On arrival at the hospital an hour after the injury an incised wound six centimetres long was found on the dorsal aspect of the right wrist, extending obliquely from the ulnar side above to the radial side below. In the bottom of the bleeding wound lay the distal ends of the divided and widely-separated extensor tendons as follows—the tendon of the extensor indicis, the tendons of the extensor communis digitorum of the second, third, and fourth fingers; the tendon from the extensor communis for the little finger, together with the extensor minimi digiti. The tendon of the extensor carpi radialis brevior was also three-fourths divided, the sheath of the extensor secundi internodii pollicis opened, and the tendon laid bare to a large extent.

"In addition the wrist-joint was opened between the cuneiform bone, which was itself slightly nicked, and the interarticular fibro-cartilage.

"The ends of the seven divided tendons were brought together with fine catgut sutures, silk sutures were used for the skin wound, and drainage-tubes were introduced.

"After the application of an antiseptic dressing the hand was fixed, by means of a splint, in a position of extreme dorsal flexion, or, as we should call it, extreme extension.

"The further progress of the case was extremely simple. With the exception of a temperature of 100·7° on the third evening, the patient remained completely free from fever. On the second day one drainage-tube was taken out, on the fifth the sutures were removed from the skin wound, and on the eighth the two remaining drainage-tubes. On the sixteenth day the patient could already move the fingers well. Three months later the position of the hand was normal, flexion and extension of the fingers were good, but the fist could not be completely closed. Abduction, adduction, as also dorsal flexion of the wrist-joint, were quite normal. The functions of the hand were efficiently performed. For some time past the patient had been able to write, to lift weights, and without doubt the hand-movements will eventually be perfect."

It will be seen that Mr. Mac Cormac not only gives details of the method, but illustrates its application and results very copiously. The uniformly favourable experience of so many surgeons in different circumstances shows how valuable is the system with which Lister's name will be ever associated. In spite of failures, which are usually traceable to a recognised cause, it has taken a firm hold upon surgery, and it cannot be sneered out of existence by those who have never given it a trial, and who, in truth, know nothing about it. We very cordially commend to such, and to all who are practisers of the Listerian treatment, Mr. Mac Cormac's book. It will instruct those who are uninformed, as well as help those surgeons who need help, and will, we believe, give a great impulse to the cause of antiseptic surgery throughout the world.

W. THOMSON.

The Diagnosis of Diseases of the Spinal Cord. By W. R. GOWERS, M.D., F.R.C.P. London: J. & A. Churchill. 1880. 8vo. Pp. 80.

THE work before us, founded on an address delivered before a local English Society, contains very much new and important matter. The book itself is well got up, and its value increased by the addition of numerous diagrams and an excellent plate, showing sections of the cord illustrative of various pathological conditions.

Perhaps the most important part of the work is that which deals with the cord as a reflex centre. In the author's words:—

“We may regard the reflex system of the cord as made up of a series of nerve loops, each posterior sensory root connected with certain anterior motor roots by means of the gray matter.”

There are two forms of reflex action—the superficial and the deep.

The superficial is that excited by gentle stimulation of the skin, which causes a contraction in the neighbouring muscles. By means of these reflexes we can study the condition of the cord throughout the greater part of its extent. Thus, commencing from below, we have first the plantar reflex, produced by tickling the sole, and depending on the lower part of the lumbar enlargement. Next in order comes the gluteal, produced by irritation of the skin of the buttock, and depending on the cord at the level of the 4th and 5th lumbar nerves. Then the cremasteric reflex, produced by stimu-

lating the skin on the inner side of the thigh, and originating at the level of the 1st and 2nd lumbar nerves. Higher up we meet with the abdominal and epigastric reflexes—the former, a contraction of the abdominal muscles, produced by stimulating the skin on the side of the abdomen, and arising from the 8th to the 12th dorsal nerves; the latter, a dimpling at the epigastrium, probably produced by a contraction in the highest fibres of the rectus, following a stimulation of the skin over the 5th and 6th intercostal spaces, and arising in the cord at the level of the 4th to the 6th dorsal nerves. No more superficial reflexes are to be found in the front of the body, but in the back they may be obtained by irritation of the skin over the erectors of the spine from the angle of the scapula to the iliac crest (dorsal and lumbar reflexes). These are, comparatively speaking, unimportant, but not so the scapular reflex, which is produced by a contraction of the muscles attached to the scapula, especially marked in the teres, on stimulating the skin over the interscapular space. This reflex originates in the cord at the level of the upper two or three dorsal and lower two or three cervical nerves. It will be readily seen that much with which Dr. Gowers here presents us is new, for though some of the superficial reflexes have been separately studied, notably the abdominal by Rosenbach and the cremasteric by Jastrowitz, they have not been studied and described throughout the whole length of the cord, as has been so ably and successfully done by Dr. Gowers. It must not, however, be thought that these reflexes are always present, or of equal value. Those most frequently absent in the normal condition are the gluteal and lumbar, while the reflex excitability of the cord is always greatest in early life, and often lessened in the aged.

The deep reflexes are represented by the "patellar tendon," or, as Dr. Gowers prefers to call it, the "knee reflex" and the "ankle clonus." These have been carefully studied abroad by Erb and Westphal, and at home by Drs. Grainger Stewart, Buzzard, and Gowers. The former depends upon the integrity of the reflex loops at the level of the 2nd and 3rd lumbar nerves, and is readily impaired by diseases of the posterior nerve roots outside the cord or in the posterior columns of the gray matter, of the anterior roots, or of the mixed nerve trunk. It is occasionally but rarely absent in health, and, as far as we have seen, decidedly feeble in the aged, and not infrequently absent in such cases, especially when complicated with chronic rheumatism. The ankle clonus is a perfectly

pathological phenomenon, only occurring in cases of organic disease. It is obtained by suddenly putting the calf muscles, which extend the ankle-joint, on the stretch by pressing the hand against the sole of the foot. By this means "a quick contraction occurs, instantly ceasing, but, if the pressure is kept up, instantly renewed, and recurring, as long as the tension is maintained, as a clonic series of spasmodic contractions. The movement is very uniform, about five to seven contractions occurring per second." If the tension is only gradually applied, no ankle clonus is produced, but if the Achilles tendon or the muscles in the front of the leg be tapped, a contraction is instantly produced. The ankle clonus is thus explained :—

"It is assumed that the passive tension may produce two effects :—
(1) To cause by reflex action an excessive irritability to local stimuli—a state of incipient contraction in which an actual contraction is produced with extreme readiness. If this tension is gradual and gentle, the effect may be confined to this. (2) If sudden, the tension excites not only the reflex irritability, but also a local contraction. When this contraction is over, the continued tension on the relaxing fibres develops another contraction, and so on in the recurring clonus."

The condition of these reflexes is of the utmost importance as regards diagnosis, especially when we have to consider the functions of the cord as a central organ. The persistence and activity of the superficial reflexes show us that the reflex loops preserve their integrity. If their action be excessive, a withdrawal of the cerebral controlling influence over the reflex actions by some disease of the cord is indicated; if they are absent, as a pathological phenomenon, we infer that the cord at the centre of the absent reflexes is injured or destroyed. Cerebral disease lessens the superficial reflexes on the paralysed side, while the deep reflexes are increased. How the former is accomplished is rather doubtful. Dr. Gowers suggests that the controlling influence over the reflex centres (situated, probably, in the optic thalamus) is itself under the influence of the highest motor centres—damage to which sets free the controlling centre, and therefore inhibits the superficial reflexes on the paralysed side. Absence of the knee reflex, as is well known, is most common in locomotor ataxy, but it may occur in disease of any part of the reflex loops corresponding to the 2nd and 3rd lumbar nerves. It is increased by descending degeneration in the lateral column. The same causes which produce an increase in the knee reflex may cause a manifestation of the ankle clonus; and since

the latter occurs only in disease, its presence is very important. Dr. Gowers records cases in which its presence enabled him to set aside the diagnosis of hysteria—formed by other medical men—and decide, as the result proved justly, in favour of organic disease. In our author's words it is "an absolute proof of the existence of organic disease." The "front tap contraction" before referred to, obtained by a gradual passive flexion of the heel, followed by a tap on the muscles on the front of the leg, "may be obtained when the clonic spasm cannot be set up, and constitutes a very delicate and convenient test of morbid irritability."

We cannot refrain from reiterating our opinion as to the importance of the study of these reflexes, and urging our readers to consider them carefully. Much has been already done in this direction, much remains to be done, and it is in the power of all to assist.

We have dwelt especially on this subject, but the whole book under review contains a great quantity of matter no less important and equally well put forth, though not so new and original, and it is want of space alone which prevents our doing justice to it. Whether we consider the chapters on the medical anatomy of the cord, on the anatomical diagnosis or the pathological diagnosis, they are equally deserving of the highest praise. They are evidently the outcome of prolonged experience, well thought out and well applied, and this volume will prove, we have no doubt, a most important stepping-stone to that perfect knowledge of the pathology of the spinal cord which we hope one day to possess. It is full of information, expressed remarkably clearly and concisely, and we heartily recommend it to our readers, and not less to the general practitioner than to the specialist.

The Truth about Vaccination: an Examination and Refutation of the Assertions of Anti-Vaccinators. By ERNEST HART, &c., &c.
London: Smith, Elder, & Co. 1880.

SOME may think that it is a waste of the valuable energies of Mr. Ernest Hart to expend any of them in combating the views of such persons as anti-vaccinators. Under ordinary circumstances this would have been our own opinion, but Mr. Hart explains in his preface the grounds for undertaking this valuable little work. He informs us he has been frequently appealed to "by all sorts of people, on all sorts of occasions, for a statement of the facts which

would enable them to answer the strong assertions of a certain class of agitators who describe themselves as anti-vaccinators." He appears to have been especially pressed for information during the late general election. In order that the required information might be ready at hand, Mr. Hart has prepared this very compendious account of the "Truth about Vaccination." The facts put forward are so familiar to most of our readers that we need not draw further attention to them at this time, but simply advise our readers to have always at hand a copy of Mr. Hart's "Truth about Vaccination" ready to convince any sceptic concerning the value of Jenner's great discovery.

RECENT WORKS ON THE URINE.

1. *The Student's Primer of the Urine.* By J. TRAVIS WHITTAKER, M.D. London: J. & A. Churchill. 1880. Crown 8vo. Pp. 75.
2. *A Guide to the Examination of the Urine.* By J. WICKHAM LEGG, M.D., Lond., F.R.C.P. Fifth Edition. London: H. K. Lewis. 1880. Cap 8vo. Pp. 110.
3. *Practical Examination of the Urine.* By JAMES TYSON, M.D. Third Edition. Philadelphia, U.S: Lindsay & Blakiston. 1879. Crown 8vo. Pp. 183.

THE three little books now before us do not pretend to rival the more extensive works of Beale or Neubauer and Vogel, but fulfil the not less important office of instructing the student or the practitioner who has not access to the larger volumes. Former editions of the works of Dr. Wickham Legg and of Dr. Tyson have been already reviewed by us, and their popularity is evinced by their arrival at a fifth and a third edition respectively. We shall, therefore, in the first instance, consider the merits of the manual of Dr. Whittaker, now for the first time a candidate for professional favour.

There is hardly any subject connected with scientific medicine which has been more developed in latter years than the study of the urine in health and disease, and the application thereto of chemistry of the microscope and of other scientific aids; and, although much has been accomplished, a good deal remains to be done, for, as Dr. Whittaker truly says, "the urine is a microcosm in which the body represents itself—its operations in health, in disease its abnormal waste and productions."

The Primer commences with a brief account of the quantity, colour, reaction, and other leading characteristics of normal and of abnormal urine—all of which are correctly and clearly explained—and, if the author pursues a beaten track, he does so with accuracy. He next describes albumen, sugar, bile, urea, and the other leading constituents of health and disease—alluding briefly to their several etiologies, but carefully giving the qualitative tests of their presence, and occasionally the quantitative ones. For the estimation of urea he recommends the hypobromic plan, and we think it is the best, although a simpler test is still a desideratum. He properly does not recommend thermometrical or barometrical corrections, which, however desirable in research, are in clinical work impracticable. In speaking of the tests for bile the author does not allude to the well-known fallacy (connected with the presence of indican) in Gmelin's nitric acid test, by far the most common method of testing for bile. Likewise he mentions that Pettenkofer's test is "often untrustworthy," but does not give the cause—viz., the contemporaneous presence of albumen or of certain essential oils.

The second part of the work is devoted to drawings, with brief working descriptions, of the microscopic appearances of the various urinary deposits and sediments, and we have seldom seen anything to equal the accuracy and beauty of these drawings, which have been copied after nature by the etching needle—a method new to us, but in every way worthy of praise. Such drawings have been hitherto generally printed either by the lithographic or woodcut processes; and, in our opinion, the lines of the former are too soft, and of the latter too broad. Dr. Whittaker's etchings are clear, sharp, crisp, and definite; they give a better model for comparison with nature than anything of this kind which we have as yet seen, and are decidedly superior to the illustrations of the two latter works. They embrace uric acid, the urates, phosphates, calcium oxalates, cystin, tyrosin, leucin, cholesterin; sanguineous, epithelial, granular, waxy, and mucous tube casts; blood and pus globules, the various fungi, and, lastly, a beautifully executed plate of different extraneous matters, which might become sources of fallacy.

The Primer is dedicated, by permission, to Mr. Seymour Haden, who is no less distinguished as a surgeon than as an artist and aquafortist; and, if it had no other merit—and it has many—these etchings would make it a valuable contribution to practical clinical work.

Having said so much in praise, we feel bound to notice some inaccuracies, which will, we trust, be corrected in a future edition. In the concluding section on volumetric testing the author (p. 62) describes a cubic centimetre as a "centilitre," or hundredth part of a litre, although it is evident from p. 10 that he is perfectly aware that a cubic decimetre or litre contains one thousand cubic centimetres. Again, at p. 65, he prepares "liquor potassæ" by adding four ounces of potassium carbonate to six ounces of water, and filtering. Now, the universal usage of both chemists and physicians devotes the term "liquor potassæ" to a solution of the potassium hydroxide (KHO), and to so designate a solution of carbonate of potassium is misleading to the student, and will not meet the approval of the practitioner. We must further deprecate the author's effort to combine the metric and the avoirdupois systems, for it is our experience that they have no simple common measure. We trust that, ere long, the beautiful simplicity of the metric system will find its way into prescription writing and into compounding; but, until it does, we must select in the laboratory either one or the other. The only possible compromise is the plan of making volumetric solutions in multiples of one thousand grains of water, either at 60° or at its minimal density. This is, however, the metric system on the grain basis.

Dr. Wickham Legg's "Guide to Clinical Clerks and Students" has been already reviewed in these pages, and, having now reached a fifth edition, is distinguished by its great accuracy and conciseness. His woodcuts are as good as woodcuts can be; and there could not, for its size, be a better manual. He gives a very neat method of conducting the process for the hypobromite determination of urea, and one which, he says, can easily be used in the wards of an hospital. With reference to renal tube casts, while admitting that hyaline casts may be formed by blood or plasma effused into the renal tubes, he rightly considers that epithelial or granular casts are formed by the desquamation or disintegration of the renal epithelium. His appendix on quantitative urinary analysis is clear, practical, and intelligible, the metric system being exclusively employed—in fact, it would be difficult to find such an amount of useful, sound information condensed into 106 small pages of clear, readable type.

Dr. Tyson, of Philadelphia, U.S.A., offers to the profession his third edition of the "Practical Examination of the Urine." This book is on a much more extensive scale than the other two; and,

in addition to a careful and conscientious view of urinary chemistry and microscopy, offers a brief but fair exposition of the present state of our knowledge of the physiology and pathology of the kidneys. The author appears to lean to the "plasma" view of tube-cast formation, but gives the disintegration and secretion views as well. His woodcuts are excellent, and one of them (p. 152), of tubular blood casts, is copied (with due acknowledgment) from an already published drawing of Dr. Whittaker's, now given at p. 49 of his work. The positions of the two drawings, however, are rectangularly reversed in the two publications.

In the last (second) edition of Dr. Tyson's work, when speaking of the necessity of slightly acidulating alkaline albuminous urine, previous to applying the heat test, it was stated, to the surprise of every practical physician, that a drop of nitric acid would answer as well as acetic acid. We are glad, in the present edition, to see this statement withdrawn, and the reasons for its incorrectness clearly stated. At p. 115 the author gives a chromo-lithographic plate of a source of microscopic error arising from scratches in glass slides getting filled up with the rouge used in polishing, and thus simulating, we presume, uric acid. Every microscopic tyro is able to distinguish a foreign body on his eyepiece by noticing that the offender revolves with the eyepiece, on the slide by observing that it moves with the stage, and on his object glass by distinguishing that it does neither. With so simple a test applicable to new glass slides, we cannot admit such a source of error to any careful observer.

The three authors allude to the great want of a simple, handy means of quantitatively determining albumen, and, among other plans, recommend the polariscope. The instrument put forward appears to be that of Soleil-Ventzke, where the left-handed rotary polarisation of albumen and the opposite movement of sugar are read off by a compensator of left or right quartz. We have used this instrument a good deal, and have been much impeded by the varying capacity of different individuals for the distinguishing of minute differences of colour. This difficulty is mentioned by Guttmann in his "Handbook of Physical Diagnosis," and in his description Guttmann commits the curious blunder (p. 386) of calling the vernier used for reading off minute fractions of a degree by the term "nonius," which is an entirely different thing, being a diagram on the engineering scale rule. We consider the quartz polariscope an essentially unreliable instrument,

and have seen the most careful observers make different readings. We would, therefore, commend to the authors the simple and perfect polariscope invented by a distinguished Irishman, the Rev. J. H. Jellett, S.F.T.C.D. This apparatus is founded on the fact that there are two varieties of turpentine, having opposite rotatory polarisation, one of which can be made to neutralise the left rotation of albumen, and the other the right polarisation of sugar. A beam of light is polarised by a nickel prism, and the extraordinary ray which passes up is divided by a peculiar prism, invented by Mr. Jellett, into two pencils of pure white light. The interposition of a tube of albuminous fluid extinguishes one of these pencils, which can, however, be restored by a stratum of right-handed turpentine, and correspondingly with sugar. The exact thickness of the stratum of turpentine required in each case forms an accurate index of the strength of the saccharine or albuminous solutions; and, as it is merely a question of seeing or not seeing pure white light, there is no possibility of error. This apparatus can be perfectly relied upon.

Notwithstanding the number of manuals on the subject, the three works which we now review form a valuable contribution to practical medicine, and we heartily commend them to our readers. They have each their special merits. The "Proceedings of the Royal Irish Academy" (2nd Series, Vol. III., Science, p. 272) give a simple method of ascertaining the presence of bile in urine supposed to be icteric by examining with the spectroscope a 3 mm. stratum of the fluid. This test depends on the fact that bile pigment in a clear solution absorbs the violet end of the solar spectrum to an extent varying, according to the amount of pigment present, from a slight obscuration up to nearly Fraunhofer line D—a property possessed by no other normal or abnormal urinary constituent. As the pocket spectroscope is now made little larger than a pencil-case, and is useful for other medical purposes, this test appears to be a useful handy one. It is not mentioned in any of these three manuals.

Notes on Fever Nursing. By JAMES W. ALLAN, M.B.; Superintendent and Physician, City of Glasgow Fever Hospital, Belvidere. London: J. & A. Churchill. 1879. 8vo. Pp. 67.

THIS admirable little book supplies a want much felt by the well-trained, intelligent fever nurse of modern times. In pithy, clear

language sound instruction is given as to the conduct and duty of the sick nurse, the management of the ward or sick-room, the management of the patient, and the principal facts relating to typhus, enteric fever, and scarlatina. Notes on relapsing fever, ague, and yellow fever, and on disinfection, are appended, and the book concludes with a useful explanatory list of the technical terms commonly used by physicians.

The following "Caution to Nurses" will show how judiciously the author has discharged the by no means easy task of instructing a nurse without placing in her way the temptation to practise medicine on her own account:—

"Nurses are earnestly requested to bear in mind that they should on no account administer medicines on their own responsibility. The prescribing of drugs must be left entirely to the doctor. If nurses neglect this friendly 'warning' they place themselves in a false and dangerous position.

"In the following Notes mention is made of the medicines which will probably be employed, and the objects of treatment, merely that the nurse may have an intelligent idea of what is being done, so that she may take an interest in the discharge of her duties.

"No encouragement is given to the nurse to encroach on the doctor's province, but it is hoped that the following hints may help to make her an intelligent and efficient assistant. It is, perhaps, unnecessary to add that, should a line of treatment be adopted different from that indicated here, the nurse should offer no comment. It is her duty faithfully to carry out the instructions of the medical men under whose orders she is acting."

Dr. Allan's "Notes on Fever Nursing" should be in the hands of all nurses.

Experimental Researches on the Regional Temperature of the Head under Conditions of Rest, Intellectual Activity, and Emotion.

By J. S. LOMBARD, M.D. London: H. K. Lewis. 1879.
8vo. Pp. 211.

THIS book gives the results of an enormous amount of work, but we greatly fear that the value of the results is by no means commensurate with the labour expended in their attainment. It is sought to determine the relative temperatures of different parts of the brain at rest and the changes which these temperatures undergo in intellectual work and emotion by measuring thermo-electrically

the surface temperature of the scalp, which for this purpose is mapped out into very small divisions.

The work is divided into three parts. In the first the apparatus and methods of research are described; in the second are contained the results of the examination in the quiescent state; and in the third are given the effects of intellectual and emotional activity on the surface temperature of the head.

At the end of the second part the author enters into some general considerations as to how far the temperature of the surface of the scalp can be taken to indicate that of the subjacent part of the brain, and he concludes "that although reason has been given to believe, first, that the brain (in spite of the non-conductivity of the tissues and the influence of the circulation) is the principal factor in the temperature of the exterior of the head, and, secondly, that small differences of temperature at the surface of the brain may be detected at the outer surface of the head, yet there is no certainty that the different relative temperatures observed at the exterior surface represent correctly, either in kind or in degree, the relative temperatures of the corresponding underlying parts of cerebral tissue."

He thinks that his method cannot as yet be safely employed in medical diagnosis, and we fear that it will be found that for physiological research it is equally unreliable.

It is impossible, however, not to recognise the honest and laborious work which the author has performed and the modesty and candour with which he states his results. We wish only that such good work had been applied to a more grateful object.

Annals of Chemical Medicine, including the application of Chemistry to Physiology, Pathology, Therapeutics, Pharmacy, Toxicology, and Hygiene. Vol. I. Edited by J. L. W. THUDICHUM, M.D. London: Longmans, Green, & Co. 8vo. Pp. 343.

THIS is the first volume of a new periodical which is intended to contain not only original articles, but summaries and critical notices of foreign works on the subjects given in the title.

The present volume consists of twenty-three articles, the matter of which is very various. Thus there is an interesting paper on "the Chemical Constitution of the Organoplastic Substances, considered with the aid of the hypothesis of their amyloide nature" (organoplastic = tissue-forming or histogenetic, and amyloide

means a body similar to amyelon, or containing an amyelon-like radicle in its constitution—this radicle appears as a kind of sugar after decomposition of the body); a biographical sketch of the celebrated R. J. Meyer; a summary of recent researches on the action and products of the action of diastatic ferments on starch; three articles on the nature of contagion; two on cholera; a summary of the researches of the editor on biliary pigments and their derivatives; an article on spermatin, a new organic base, whose phosphate forms the well-known so-called Charcot's crystals, as to whose real constitution there has been so much doubt; and a review of Nussbaum's work on antiseptic surgery. In all these and in the other papers there is more or less of interest.

Dr. Thudichum is, among physiological chemists, one whose hand is against every man and every man's hand against him. He seems to like his singular position, and we suppose it is partly in support of this that he employs a peculiar vocabulary, which does not appear to us to possess any striking advantages over that generally used, but which necessitates the addition of a glossary to the end of the volume.

The last article is polemical. In it Professors Maly and Hoppe-Seyler are very roughly handled, partly for having appropriated the editor's discoveries on the subject of the bile-pigments, and partly for having misrepresented his views. In this there is a good deal of plain speaking. Thus we are told that "the confusion of Hoppe-Seyler rises to a wild conflict of errors," and that "his entire representation of the subject is unworthy of literature and of science." This seems a very pretty quarrel as it stands, and, as we do not look on it as a free fight, we think it best to leave it to the physiological chemists, more particularly as we know that Maly and Hoppe-Seyler are very well able to take care of themselves and are capable of hitting just as hard as Dr. Thudichum.

Meanwhile, we heartily welcome the "Annals of Chemical Medicine," and wish it every success.

Lexicon of Medicine and the Allied Sciences. (Based on Mayne's Lexicon.) By H. POWER, M.B., and L. W. SEDGWICK, M.D. Second and Third Parts, A—Art. (With reprint of Part I.) London: The New Sydenham Society. 1879, 1880.

THESE fasciculi of several hundred pages, including a re-issue of Part I., which was originally printed with an inadequate margin,

covers the ground from A to Arteriography. If we may judge from these portions of it, the work will reach a prodigious size, and no intimation is afforded of the probable time within which it will be completed, beyond a prefatory note that the editors will do the best that, as busy men, they can do to effect the regular and speedy issue of the parts. With all respect for the learned editors, we much doubt if any medical men who are engaged in the engrossing duties of active practice can have the requisite knowledge of philology or give the amount of time necessary to do justice to the difficult and toilsome task of compiling a trustworthy lexicon. It is a pity, to our thinking, that the editors have deemed it right to exceed their function of furnishing accurate definitions by expanding these into short essays on pathology and therapeutics—*e.g.*, *sub voce*, abscess, anaemia. Again, it appears to us little else than a waste of space, in a lexicon intended for medical readers, to devote more than four pages to an enumeration and definition of the various species of Agaricus. The definition given under the heading, "Acid, arsenic," quite puzzles us: "Unsymmetrical ethers formed from arsenious acid." We trust that in succeeding parts the importance of scientific accuracy and of condensation within reasonable limits will be duly kept in mind by the editors, to whom we wish success in their laborious undertaking. The typography and mechanical execution of the work are unexceptional.

Medical and Surgical Report of the County Tyrone Infirmary for the year 1879. By EDWARD C. THOMPSON, M.B.; Surgeon to the Infirmary. Omagh. 1880.

DR. THOMPSON, the Surgeon in charge of the Tyrone Infirmary, may be congratulated, not only on the amount of work his statistics prove to have been done, but on the clear and simple manner in which his statistics are compiled. He has successfully vindicated the economical management of the institution. We very much doubt whether in any other infirmary in Ireland the expenditure is so small in proportion to the work done. The average cost of each patient was only £2 1s. 7d., and of each bed occupied during the year, £30 14s. 3d. The antiseptic treatment is employed in all operations, and out of 82 operations there was only 1 death.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART III.

HALF-YEARLY REPORTS.

REPORT ON MEDICAL JURISPRUDENCE.

By STEWART WOODHOUSE, M.A., M.D., Dubl.; Lecturer on Pathology, Carmichael College of Medicine and Surgery.

CORONERS' INQUESTS.

ONE of the most pressing subjects for reform in medical legislation is our present system of investigation into the causes of sudden death. When the instituting a *post mortem* examination, or even an inquest at all, is at the option of a coroner who may or may not have any respect for medical evidence, the results must be unsatisfactory. If there is to be anything like uniformity in the procedure of coroners' courts, some more definite principles than those that now obtain must be laid down for their guidance. Every now and then the public are roused into a protest against the laxity of the present system, but no change has yet been promulgated. The Plymouth Board of Guardians have requested from the coroner of their district an explanation of his conduct in an inquest upon a woman, aged sixty-four, who had died two hours after the commencement of an attack of vomiting, which came on soon after her breakfast. The deputy-governor said that no medical evidence was taken, and no *post mortem* examination made. The medical officer stated that he had communicated to the coroner the facts connected with the death of the woman, and as the symptoms led to a suspicion of poisoning he could not understand how the jury had arrived at a verdict of "Death from natural causes." An inquiry like this is admirably adapted to conceal actual death from poison. *The British Medical Journal* supplies another instance of a miscarriage of justice, but in this case the jury, rather than the coroner, were to blame. A child at Okehampton was alleged to have died from salivation while being treated for measles. The surgeon, under whose care the child had been progressing favourably for a week, found it suffering from

swelling of the face, and an increased flow of saliva, and he mentioned to the parents his suspicion that mercury, given without his knowledge, had caused the symptoms. The mother admitted that three or four powders had been given by a "recognised nurse," who undertook the medical treatment of children. The swelling of the mouth and fauces continued, offensive effluvia were emitted, and several of the teeth dropped out. The child died, in the opinion of the surgeon, from exhaustion produced by mercurial salivation, and in this view he was corroborated by the testimony of a consultant, who testified to the severe salivation, the absorbed gums, and necrosed lower jaw of the child. Some of the "nurse's" powders were obtained, and found on analysis to contain mercury. In spite of the proof of the administration of the poison and of its effects, the jury found that the deceased "died from measles and other disorders." It is idle to hope for a true registration of disease when the cause of death may be so grossly misrepresented.

WHAT CONSTITUTES "POISONING"?

In the higher courts a curious point of law is still *sub judice*. A prisoner was indicted for having administered half an ounce of oil of juniper to a woman with the intention of procuring miscarriage. Violent sickness only followed, but the prisoner was found guilty on the ground of having administered a "noxious thing." Although the Appeal Court affirmed the conviction the reasons for doing so were not identical. Lord Coleridge considers that the quantity of the poisonous substance administered is the material point, and that if a man administers with intent to cause abortion so small an amount of a poison that no ill effects are produced, he cannot be convicted of having administered a "noxious thing." On the other hand four of the judges held that the giving of any quantity of a poison, however small, with an evil intent constitutes the statutable offence.

WOOL-SORTERS' DISEASE.

We have to regret the discovery of an unwelcome addition to our list of noxious trades. Dr. Bell, of Bradford, has described, with graphic detail, an outbreak of a most rapidly fatal character which has occurred among the wool-sorters of that town. At all times this occupation had been an unhealthy one, in consequence chiefly of the particles of dust irritating the respiratory tract, and

producing bronchial and pneumonic affections. Occasionally sorters had died after a four or five days' illness from what was regarded as a sort of typhoid pneumonia. When deaths of this character occurred, it was noticed that the mohair sorted was of an exceptionally dirty and offensive kind; but as true malignant pustule has appeared in several cases during the past month, the real nature of the malady became so alarming that the Local Government Board are instituting a special inquiry with the view of preventing future catastrophes. In four cases out of the eight last reported, pustules formed—in one the charbon was situated on the forehead, in another on the side of the neck. The presence or absence of these malignant pustules seemed to make no difference in the course of the disease. The onset was always sudden—malaise, shivering, severe pains in head and back, and violent vomiting, were the characteristics of the first two days' illness. With some collapse supervened, and death on the third day; with others high fever and delirium set in, death resulting on the fourth or fifth day. In the blood of a man who died without any pustule manifesting itself, Dr. Bell found the bacillus anthracis—the fungoid organism whose spores grow and flourish at the temperature of the body. The occurrence of the pustule appears to depend on the mode of access of the poison to the system. If it is only inhaled, the *fièvre charbonneuse* results without local lesions; if, in addition, it enters by a hair follicle or other opening, there is a malignant pustule as well. It is the lowest class of mohair, matted with blood and other putrefying animal matter, and imported from Persia, where the disease is endemic among the herds, that is the most dangerous. The workers themselves state—and Dr. Bell believes their view correct—that steaming the wool before sorting would render it innocuous, but as yet the manufacturers have only partially adopted this precaution.

To *The Lancet* of 12th June we are indebted for the publication of an autopsy made by Dr. Greenfield and the Local Government Inspector on a wool-buyer who died after about four days' illness, having been previously out of health for several days after examining some Persian wool. In addition to the conditions usually met with in blood-poisoning—*e.g.*, hypostases, early decomposition, a fluid state of blood, cedematous infiltration, pleuritic effusion, and pulpy condition of the spleen—there were also haemorrhagic effusions in the connective tissue of the mediastinum, about the larynx, kidneys, &c., haemorrhagic infarctions in the lungs, and large extravasations

in the pia mater. On examination of the blood Dr. Greenfield discovered the bacillus anthracis, though in a somewhat unusual form; and he has been able to reproduce the disease by inoculation of animals—amongst them a cow—with the blood, and to demonstrate the identity of the disease with the splenic fever of cattle.*

DOMESTIC POISONS.

Arsenic.—Dr. Garlick reports, in *The Lancet*, a well-marked case of poisoning by arsenic. Two children were brought to him by their mother, suffering severely from symptoms of arsenic. After their recovery, which for a time was doubtful, he obtained a specimen of the wall-paper. It was of a very common description; the colours were red, brown, and yellow, and in the red arsenic was detected in large quantities. It is popularly supposed that it is only in the emerald green that arsenic is to be found. It is certainly this colour which is most liable to contain arsenic, but it is also used in a great variety of colours—red, brown, pink, low-toned greens, and notably in magenta, the base of all other aniline dyes. In high class papers very little advantage could be gained by the manufacturer from its use, as the cost of the colour bears so slight a proportion to the total cost of production; but in the very cheap papers, and especially those destined for foreign markets, where a halfpenny in the dozen yards might turn the balance against the English exporter, there is some temptation to use it for the sake of cheapness. In a paper read before the Society of Arts, London, Mr. Carr referred to the use of arsenic in dyeing, and stated that, while in the aniline dyes large quantities of it were used, only the first-rate manufacturer had recourse to subsequent processes to abstract it. He showed specimens of its employment in playing-cards, artificial flowers, card-board boxes, confectionery wrappers, sweets, &c., and he deemed its use so general, and, at the same time, so detrimental, that he contended a Government investigation alone could deal with the question. He suggested that the retail vendors should be made responsible in the first instance, and that colour-manufacturers who sold arsenical pigments without declaring their character should be punished. The Medical Society of London have appointed a sub-committee to collect information on the subject, with the view of pressing upon the Local Government Board the necessity for legislation. *The British Medical Journal* has made

* Cf. Dr. Cameron's Report on Public Health, in the number of this Journal for May, 1880, for an account of a similar disease amongst workers in hair.

mention of some experiments detailed before this Society—the experiments chiefly consisting of attempts to discover arsenical contamination in the air of a room where Scheele's green was heated up to 100° Fahrenheit. The results were of a negative character. But the fact of poisoning still remains, even though its volatilisation remains unproved, just as lead-poisoning may occur from sleeping a single night in a room the walls of which have been freshly painted.

Lead-poisoning.—M. Malherbe, of Nantes, publishes (*Jour. de Méd. de l'Ouest*) a case occurring from a peculiar cause. A man who had suffered for several years from colic, with constipation, with weakness of gait, and with pains in his limbs so rheumatic in character that he had been treated with salicylates, was one day seized with giddiness. On closer examination his hands were seen to be bent on the forearm, the extensor muscles of which were atrophied, and the blue line was observed on the gums. The only way in which he could have been poisoned by lead was through matches impregnated with chromate of lead, which he constantly used to light his pipe.

Fatal Administration of Chlorate of Potassium.—To this almost household remedy is attributed the death of a child. A lotion containing a solution of it (1 in 60) was prescribed for a child, aged three and a half years, suffering from sore throat. The nurse, instead of washing its mouth with it, as had been ordered, gave it to be drunk as a beverage, and ignorantly continued giving it after the toxic symptoms had set in. Somnolence soon supervened, and the face and lips became intensely cyanotic, probably from decomposition of the salt and the consequent presence of carbonic oxide in the blood. Death resulted on the seventh day. It was found that 450 grains had been taken.

DETECTION OF STRYCHNIA IN EXHUMED BODIES.

How long after death strychnia may be detected in the body is a question which Prof. Ranke has set himself to discover by a series of experiments on dogs of various sizes and species, to which he administered one decigramme of nitrate of strychnia. *The London Medical Record* summarises his conclusions respecting the possibility of detecting strychnia in dead bodies. They are briefly as follow:—
1st. It was not possible to prove the existence of the poison by a chemical test in dogs which had been poisoned by the dose mentioned above (and which would prove fatal to a human being) after it had been buried 100, 130, 200, and 230 days. 2nd. The

presence of the poison could, however, be suspected from the peculiarly bitter taste of extracts of dogs which had been buried in the earth for 330 days. 3rd. The physiological test for strychnia is much more delicate than the chemical test. Frogs, under the skin of whose backs a cold water solution of the extract had been injected, exhibited violent tetanic symptoms a short time afterwards. The effects of the poison were especially strong if the extracts were taken from animals that had been buried only 100 days, but even after remaining in the earth for 330 days the extracts would produce the symptoms of strychnia poisoning in frogs. 4th. The physiological reaction is the same whether the bodies have remained in a moist or in a dry soil. 5th. Extracts which have been prepared from bodies that are far advanced in putrefaction produce a peculiar effect on frogs. They seem to become prostrate and stupified, and the action of the heart is rendered much more feeble and slow. This is often apt to partially cover and retard the action of the strychnia. This effect is most striking when the extract is prepared from the bowels, less so when it is made from the stomach, and least when the extracts are prepared from the liver and spleen. 6th. The physiological action of strychnia is most distinctly seen when the extracts are prepared from the liver and spleen. This is not a new discovery, in so far that it has been long known that in case of strychnia poisoning traces of the poison could be discovered in these organs *par excellence*.

RAPID ACTION OF CYANIDE OF POTASSIUM.

A case of poisoning by cyanide of potassium is recorded by Auer. A lad, sixteen years of age, dissolved some of this salt in a vessel of water, and drank it in the presence of his friends. It is thought he could not have taken more than a mouthful, but the solution was nearly saturated. He became unconscious immediately, and died between two and three minutes afterwards. At the autopsy made ten hours after death the blood was dark and fluid, and the mucous membrane of the stomach was of a deep cherry-red colour. There was no smell of bitter almonds, a fact which may be accounted for by the circumstance that at the time the poison was taken there was a considerable amount of food in the stomach. But there have been several instances previously recorded of an absence of this smell in cyanide of potassium poisoning, and even in some cases when prussic acid was taken the characteristic odour was imperceptible immediately after. So rapidly fatal a termination as this

is exceedingly rare even in poisoning by cyanogen compounds. Auer particularly directs attention to the deep cherry-red colour of the stomach—an invariable characteristic. The blood is sometimes of the same hue.

IODIDE OF STARCH IN POISONING.

As a general antidote in poisoning, Dr. Bellini, in a paper read before the Medical Society of Florence, and summarised in *The Scientific American*, recommends iodide of starch. It is free from any disagreeable taste, and does not possess the irritating properties of iodine, so that it can be administered in large doses. He has made numerous experiments, and states, as a result of these, that at the temperature of the stomach, and in the presence of the gastric juice, the iodide combines with many of the poisons, forming in some cases insoluble compounds, in others soluble compounds, which are harmless so long as they do not exist in too large quantities. He recommends it as safe in all cases where the nature of the poison is unknown, and as especially efficient in cases of poisoning by the alkaloids and alkaline sulphides, by ammonia, and especially by those alkaloids with which iodine forms insoluble compounds. In cases of poisoning by salts of lead and mercury, it aids the elimination of these compounds. In cases of acute poisoning an emetic should be employed soon after the administration.

FATTY DEGENERATION OF THE DIAPHRAGM AS A CAUSE OF INSTANT DEATH.

Frequently persons affected with emphysema, bronchial catarrh, slight degenerations of the myocardium, die suddenly without new complications. At the autopsy are found emphysema, bronchial catarrh, hyperæmia of the lungs, some hypertrophy of the heart, with slight fatty degeneration, but nothing sufficient to explain the death. Zahn (*Virchow's Archives*) has found in cases of this kind a fatty degeneration or thinning of the diaphragm, and maintains that these alterations are sufficient to explain the instantaneous death from asphyxia.

ANTE-MORTEM RIGOR MORTIS.

Mr. Alfred Finch, M.R.C.S., reports, in *The Lancet*, a case of a woman, sixty-five years of age, who had abstained from the use of all food for two weeks, while suffering from mental distress. In dressing one morning she observed a numbness of the legs, and on

attempting to come down stairs all power of motion was lost. Examination showed entire absence of voluntary and reflex motion as well as sensation below a clearly defined line at Poupart's ligament, where also was a well-marked difference in temperature, the surface above being warm and that below cold and livid. There was also perfect muscular rigidity. Within two hours after death, which occurred fourteen hours after the development of the symptoms just related, all muscular rigidity had disappeared.

EARLY VIABILITY.

The St. Louis Courier of Medicine details a case of an infant born after six months and twenty days of gestation. The child at birth was so feeble that the milk had to be drawn off by the breast-pump and given by teaspoonfuls, and so small that the father's finger-ring could be passed over the foot nearly to the knee. Thirteen days after his birth he weighed $2\frac{3}{4}$ lbs. He was then able to take the breast. The child is now two years of age, has sixteen teeth, weighs 22 lbs., walks with agility, says some words distinctly, and shows not less intelligence than other children of his age.

MENSTRUAL DISCHARGE IN AN INFANT.

Mr. Harle, of Enfield, has sent particulars of a remarkable case of the above to *The Brit. Med. Jour.* (June 5th, 1880). His patient was the youngest of three children, girls. At the age of five months the mother observed a sanguineous discharge, which continued for about three days, and returned every month till the patient was nine months old. At ten months old she was weaned, and the discharge did not return till the eleventh month; it then returned periodically till the child was fourteen months old, when she died of diarrhoea. At the *post mortem* examination the body was well nourished, the complexion fair. There were marks of blood, somewhat dry, on the pudendum, labia, and peritoneum, corroborating the mother's statement that the child had recently the "monthly discharge." The pudendum was large, covered with fine hair. The vagina was healthy. The uterus when removed measured an inch and five-eighths in length externally. The os was very patent, the lips congested. There was nothing abnormal in the cavity. The vessels of the broad ligament were injected. The left ovary was twice as large as the right; it was dilated, forming a cyst of the size of a horse-bean. The right ovary contained a number of small cysts, each about the size of a pin's head.

CHILD SAVED BY POST-MORTEM SECTION.

A case of sudden death of the mother at the end of pregnancy, with *post-mortem* section and living child, is recorded by Dr. Storch, of Copenhagen, in the *Centralblatt für Gyn.* The mother had suffered for some time from albuminuria and œdema of the lower extremities, and towards the end of her pregnancy she complained of breathlessness and general debility with much restlessness. The only indication of cardiac disease was a weak systolic murmur audible over the aortic valves; there was much hydramnios. The patient was suddenly seized with a fit of coughing and intense dyspnoea, during which she sprang out of bed, and seated herself in a chair in a condition of extreme cyanosis. An attempt was made to give relief by venesection, but no blood would come. A few seconds afterwards she died. About 8–10 minutes after death Cæsarean section was performed, and a well-developed male child removed. The entire operation lasted about half a minute. The child was pale and shrunk. Dr. Storch, however, perceived a feeble and slow pulsation in the cord, about seventy beats in a minute. The cord was speedily tied, and persistent efforts at resuscitation continued for an hour and a half, the methods employed being the rhythmical blowing of air into the chest through a silver catheter, alternating with Schultze's method of artificial respiration. These were followed by complete success, although a full half-hour passed before the child made its first feeble spontaneous inspiration.

SOUND HEARD AFTER DEATH OF FETUS.

Dr. Harvey communicated a note to the Obstetrical Society of London on an acoustic sign heard after the death of the fetus. He heard a peculiar rustling sound over the whole uterine tumour. This had been described by Stolz as due to gaseous decomposition of the liquor amnii after the death of the foetus. The sound was between large and small crepitation, and the diagnosis based upon it was correct.—*Calcutta Medical News.*

INTRATERINE EDUCATION.

The Tri-State Medical Society (United States) have been discussing at great length the subject of maternal impressions upon the fetus. Numerous cases were related of deformities resulting to the child in consequence of the mother having been frightened

by animals, &c. An instance is mentioned of a negro woman being butted by a ram when she was pregnant, and bringing forth at full term a child with the peculiar white-looking eyes of the sheep, with hair white as wool, and, more remarkable than all, with "the peculiar scent of the sheep, it being especially notable when he was heated and perspiring freely."

A Maryland physician, however, leaves these merely physical phenomena far behind. The following occurred in his practice:—"A lady during pregnancy carried with her a pocket edition of Moore's Poetical Works, which she read almost constantly. Her child at three years of age exhibited a most wonderful gift of putting sentences in rhyme—in fact, naturally expressed his little ideas and thoughts in flowing measure!" We blame not the bard, but a case like this shows how important is a well-assorted library to a gravid uterus.

EPILEPSY AND CRIME.

In *Brain*, quoted by *London Medical Record*, Dr. Clarke has published some very suggestive tables of statistics. He finds it hard to avoid the conclusion that alcoholism in the parents is a predisposing cause of crime and epilepsy. Forty-four per cent. of epileptic criminals were the children of drunken parents. With regard to the parents he finds that epilepsy is more frequent in the mother than in the father, and that the percentage for both parents is higher with the women than it is with the men. In drunkenness the reverse holds good. The proportion of epileptic and insane relatives is found to be very much greater with criminals than with ordinary epileptics. It has been asserted by Taquet that "sexual desires show themselves early in the children of drunkards, and are associated with absence of moral sense." The author finds that the convictions for bastardy are three times as numerous among epileptics as among non-epileptics—a fact which strongly bears out his idea that epilepsy owes its origin to hereditary alcoholism. Other tables show that the amount of crime as indicated by the number of convictions is greater among epileptics than among ordinary criminals.

ALFRED SWAINE TAYLOR, M.D., F.R.S.

A Report on Medical Jurisprudence would be incomplete if it omitted to record its losses as well as its progress. To the scientific world generally Dr. Taylor's death is cause for deep regret. The

most accomplished writer on Forensic Medicine, the most skilled Toxicologist, and the most impartial witness, has passed away fuller of honours than of years. In these days when analyst is analysed against analyst, and scientific testimonies in our law courts—more *ex parte* than expert—are pitted against each other to their neutralisation and discredit, his utter absence of partisanship in the witness-box is to be admired if it cannot be imitated. He was an ardent advocate of the adoption of a system of experts or assessors, who should, by the nature of their position, be removed from the temptations of exaggerating or extenuating the pleas of litigants. From public life he shrunk as much as he could; he preferred unostentatiously to observe and to record for the benefit of the generations to come.

ON THE PRESENCE OF BILE IN THE LYMPH AND BLOOD WHEN DIVERTED FROM ITS NATURAL CHANNELS OF ELIMINATION.

FLEICHL was the first to upset the opinion generally accepted up to his time—that whenever any obstruction whatsoever in the bile duct prevented the elimination of the bile by its proper channels, it immediately made its way into the blood in the substance of the liver itself. After ligature of the bile duct, he found the biliary acids to be present in the thoracic duct before he could detect them in the blood; hence he inferred that the bile made its way into the blood, not directly, but through the lymphatic system. Kufferath has verified and extended these views. First he repeated Fleichl's experiments. In eight dogs he tied the bile duct and collected the lymph as it flowed from the thoracic duct. In each case he found the biliary acids present. In two cases only were these acids found in the blood, and in these a *post-mortem* examination showed that a bifurcating branch of the thoracic duct had escaped ligature. In his second set of experiments, he tied both the biliary duct and the thoracic duct. Three hours afterwards he analysed the blood. In three out of four cases there was no trace of the hepatic secretion in the blood. In the fourth case, where such was detected, the autopsy showed a second thoracic duct which was unligatured. Hence, he concluded that as there are no biliary acids in the blood three hours after the simultaneous ligature of the bile and thoracic ducts, therefore the bile enters the blood *exclusively* through the lymphatic vessels. The lymphatics in the liver are stained yellow, so that it is not the biliary acids alone, but the bile itself, which takes this course.—*Journ. de Med., de Chirurg., et de Pharm. de Bruxelles*, Juillet, 1879.

K. F.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF
DUBLIN.

President—E. H. BENNETT, M.D.

Secretary—JOHN WILLIAM MOORE, M.D.

Duro-arachnitis.—DR. FINNY said: Cases of duro-arachnitis are sufficiently rare to justify me in laying before the Society the accompanying specimens of the brain and portion of the skull.

In the vast majority of these cases, rare though they be, the inflammation of the arachnoid lining the dura mater (supposing such exists as a separate membrane) originates in injury to the skull, or is induced by extension of inflammation from the internal ear. The case I lay before you seems to be an exception in that there is no history of any injury; there is no evidence of disease of the external, middle, or internal ear, and although in one spot—the size of a fourpenny-piece—the dura mater over the mastoid cells is velvety, red, and thick, no communication can be detected with the cells, nor, in the opinion of the President and other members of the Society who have examined the bone, are the mastoid cells diseased.

A point of clinical import is the fact that the symptoms due to irritation and inflammatory changes in the nervous centres were chiefly developed on the *same* side of the body as the lesion in the brain.

B. P., aged thirty-nine, unmarried, a printer, engaged on one of the daily papers in the city, was admitted to the City of Dublin Hospital under my care on the evening of December 21, 1879, in a semi-comatose and delirious condition.

His history, as derived from his friends, was to the effect that his health was always good up to about five days ago, when he complained of headache and pain in the right ear, and that a discharge from it took place in the evening. From that time the pain in the head increased, and on the day before admission he had vomiting, rambling in his talk, and stiffness in his legs; so that he lay in bed, and in attempting to

turn him his friends found considerable difficulty owing to the rigidity of the extremities. There was some squinting noticed also.

On admission the following were the prominent features :—The patient had constant raving and talking about his business, but he was by no means violent. He lay on his left side with his knees drawn up, and at first he attempted very often to leave his bed, though easily restrained. Over the right side there was a great deal of rigidity, more so than on the left, and the right pupil was more contracted and not so sensitive to light as the left; there was also convergent strabismus of the left eye. There was absence of hyperesthesia of the face at this time. The patient had a haggard look, and face and body were greatly emaciated. Vomiting, which was reported to have been persistent from the 20th, had ceased the day of his admission, and did not return. Evening, pulse 130, and temp. 104·6°. In this condition he remained till next day, when, towards the afternoon, he became quiet, hardly speaking at all, and he sank into a comatose condition. The pulse rose to 140, but the temperature was two degrees lower than the day before. The urine was removed by a catheter; the bowels were confined—the abdomen being retracted. In the evening, while comatose, reflex cutaneous excitability of both sides of the face was noted, the slightest touch of a feather producing spasms of the facial muscles; about midnight it was most marked in the right side. Without convulsions or other change he sank and died at 2 30 a.m. of 23rd.

Post mortem examination of the brain was made twelve hours after death.

No discharge could be detected at the right meatus auditorius, nor any fracture of the bones of the head. On removing the calvarium, the dura mater, which was healthy, seemed fuller over the right hemisphere, and on opening it the cause of the fulness was seen to be an extensive uniform purulent effusion of a greenish yellow colour, quite concealing the convolutions. The inner surface of the dura mater was smooth and free from vascularity, except over the upper surface of the petrous and mastoid portions of the temporal bone. Here a spot the size of a threepenny-piece was noticed to be red, velvety, and raised. On stripping it off the bone its continuity was intact, no laceration or hole being noticed in it, and it was not particularly adherent to the subjacent bone—which latter, to all appearance, seemed healthy. Sections of the temporal bone were made, but no trace of disease could be detected. The only other point connected with the examination of the skull was that the posterior clinoid processes of the sphenoid seemed easily lacerated, as well as being red and spongy, and the dura mater over them more vascular than elsewhere. The pus was limited by the falx cerebri to the right side of the brain, and did not extend backwards beyond the fissure of Rolando. There was no pus under the arachnoid covering the brain,

nor in the ventricles ; the surface of the convolutions underlying the pus were, however, congested, and seemed somewhat softer than on the other side. There were no abscesses in any part of the encephalon.

The points which to me seem to be of pathological interest are the following :—

1. The existence of purulent inflammation of the arachnoid and dura mater without diseased bones or injury to the scalp, causing separation of the dura from the bone.

2. The strict limitation of the effusion to one hemisphere by the falx cerebri.

3. The local chief pressure upon, and irritation of, the brain was at the right side, and the evidences of such brain affection were seen mostly on the right side of the body, face, arm, and leg.—*January 10, 1880.*

Myo-fibroma of the Uterus.—MR. STOKES said : On the 29th of last month a female was admitted into the Richmond Hospital, under me, suffering from an enormous abdominal enlargement, the commencement of which, she stated, she observed twelve years ago. She was the mother of three children, and stated that she observed the enlargement shortly after the birth of the last one. It slowly increased in size until it reached the enormous dimensions it had on her admission to hospital. It did not until quite recently interfere with her general health, or indeed much with her comfort. About four weeks previous to her admission to hospital she commenced to suffer from a sudden increase in the size of it, and this was accompanied with a great deal of sickness of the stomach—in fact, she had the greatest difficulty in keeping anything on her stomach except fluids. She had lived on beef-tea, chicken-broth, and things of that sort, for four or five weeks previous to her admission to hospital—not having been able to bear any solid food whatever. She was a healthy-looking woman, and well nourished. On examining her abdomen we found an enormous enlargement caused by the tumour. It was irregular on the surface, being more or less lobulated. There were one or two indistinct points of fluctuation. There was, of course, uniform dulness over the whole surface of the tumour, anteriorly and laterally. The two or three points at which I thought I perceived fluctuation made me come to the opinion that we had to deal with some form of cystic disease ; but from the history of the case, and from the appearance of the tumour, I was inclined to think—and this view was shared in by my colleagues, especially after an examination made with the sound—that the tumour was not merely uterine, but was probably associated with ovarian disease—that we had, in other words, mixed uterine and ovarian disease to deal with. I asked Dr. Kidd, the Consulting Obstetric Surgeon, to make an examination of the case for me. I was not able to meet him in consultation on the day he called at the hospital, but he

wrote me a note, an extract from which I will read:—"The surface of the tumour is very irregular. There are patches of indistinct fluctuation. On the right side there is one large, round, semi-elastic mass, and into the interior of this the sound passes $4\frac{1}{2}$ inches. The uterus is so much dragged up out of the pelvis that I could scarcely reach to it—in fact, could not get at it till I passed two fingers into the vagina. The os is thrown very much forward, and resting on the brim of the pelvis. The tumour has been of very slow growth. My impression is that the mass on the right side of the abdomen is an enlarged uterus, and the remainder is either a mass of fibro-cystic tumours of the uterus, or a multilocular tumour of the ovary closely connected with the uterus." His opinion in the main coincided with the one I formed as regards the nature of the case. Having regard to the great anxiety of the patient to obtain relief, and encouraged also by the success that attended the removal of a somewhat similar tumour by my colleague, Dr. Stoker, last year—and also my colleagues, including Dr. Kidd, being of opinion that it was not only justifiable but right to give her a chance of living by removing the enormous growth—I determined to perform the operation. I was further encouraged by the fact that the patient was a person of very quiet, placid mind, and hopeful disposition. She was most anxious to have the operation performed, and on several occasions pressed me to undertake it. I accordingly did so. On making an incision at the point where I thought the fluctuation was most distinct, I plunged the trocar into the tumour, but there was no evacuation of any fluid. There was a thick, unctuous fluid, which would not pass through the tube. I made another incision at a situation where I had also felt fluctuation, but without being able to extract any fluid there either. I then passed my finger into the tumour, but found that it was hopeless to expect to evacuate fluid from it, as it was mainly solid, and gave the sensation as if you passed your finger into a mass of honeycomb. I enlarged the wound to a very great extent up towards the sternum, in order to give room to extract the tumour, which, after a great deal of difficulty, I succeeded in doing. At the moment that the tumour was exposed to view, very alarming symptoms supervened. The patient became pulseless, her lips grew white, her eyes turned up, and respiration ceased. For a few minutes I was in dread that she had expired on the table. However, our Resident Surgeon, Mr. Lentaigne, gave her a subcutaneous injection of ether, which had the effect of rousing her, and I was enabled to complete the operation. The pedicle, which consisted of the neck of the uterus, was transfixated with ligatures, and securely fastened; and in addition, in order to make assurance doubly sure, I passed in a large, strong acupressure pin, and encircled it with a carbolised silk ligature, and then removed the tumour. I endeavoured to enucleate it by removing the capsule, but finding that I could only do so to a certain extent,

abandoned the attempt. The remaining steps of the operation it is unnecessary to detail.

Half an hour after the operation her temperature was 99.6°, her respiration 26, and her pulse 116, so that there had been a very fair reaction. She expressed herself quite free from pain and suffering, and very hopeful as to the result. At half-past four in the afternoon she was in very much the same condition, the only thing she complained of being thirst, which was relieved by placing small pieces of ice in her mouth. Her pulse and temperature were then normal; and on the morning after, her temperature was still normal, but her pulse was very fast and very weak, her skin moist, and her thirst very great. At nine o'clock the following day her pulse had become so very weak that it could not be counted; her temperature was 98.4°; and she was then taking ice, milk and brandy, and latterly beef-tea. I saw her in consultation with my colleagues, Dr. Stoker and Dr. Thomson, and found her temperature under the axilla unchanged, but she was almost pulseless at the wrist, and her extremities were beginning to get very cold. Her intellect was perfectly clear, and she stated that she was not in any suffering. At Dr. Stoker's suggestion we commenced the administration of nutritive enemata, consisting of yolks of eggs, Hoffmann's anodyne, and tincture of digitalis. The first was not retained, but the second was, and with very good results, as I was then enabled to take the pulse, which I had not previously been able to do. The nutritive enemata were given every third hour; the fourth and fifth were not retained. She also got beef-jelly and brandy by the mouth. At ten o'clock I saw her, and found that her pulse had again become almost imperceptible. I gave her another enema, but without producing very much change. At that hour she got much weaker, and syncope began to come on. For this she got a drachm of ether hypodermically. At twelve o'clock she got very much weaker, and soon after passed away quietly.

On making a *post mortem* examination next morning, I found that the upper portion of the wound had almost completely closed. On examining the abdomen I found no trace of haemorrhage. There was a little oozing of blood on the surface of the stump, which had coagulated, but not more than about a drachm of blood. Therefore her sinking was not from any internal haemorrhage, but must be put down simply to exhaustion and shock.

In reference to the pathology of the tumour, Mr. Abraham, Curator of the Museum of the Royal College of Surgeons, has given the following note:—

"The tumour measures in its greatest diameter nearly 13 inches, and in thickness about 6 inches. In shape it is sub-discoid, but the presence of two large lobar protuberances in its upper border gives

it a somewhat cordate appearance. In some other parts also an attempt at lobation is visible, and under some of these projections the consistence is softer, probably from the presence of adjacent cysts. Under one or two of the smaller lobes the consistence is particularly dense and firm. The new growth is apparently from the anterior wall of the uterus, of which a great part of the fundus and body must have been involved. In its removal a considerable portion of the broad ligaments, together with the ovaries and Fallopian tubes, have been taken away—a course which must have been necessary from the fact that these ligaments form a great part of the tumour's covering. These parts all show more or less hypertrophy. The ovaries are enlarged, and altered in shape—the one measuring five centimetres in length, three in breadth, and two in thickness; the other, seven centimetres in length, four in breadth, and one in thickness. They present numerous cysts in their substance, as do their round ligaments. The neighbouring structures, such as the organ of Rosenmüller, also appear to be diseased. The section through the tumour has a marbled and mottled appearance—solid, and made up of nodules of different consistence. The whole is very vascular. In some places towards the periphery the degeneration seems to have so far extended as to give rise to the formation of cysts, containing a thick glairy fluid, but not in very great amount. Some which exuded was found coagulated the next day."

Report of the Committee of Reference.—The Committee have examined Mr. Abraham's microscopical sections submitted to the Society by Mr. Stokes, as well as a series of mountings prepared by themselves. They are unanimously of opinion that there are no appearances to warrant the idea that the tumour was in any part carcinomatous. They regard the tumour as a typical myo-fibroma of the uterus.—*January 17, 1880.*

Melanotic Sarcoma of the Orbit.—Dr. E. H. BENNETT said: This tumour was taken from a healthy man, a native of the county of Kerry, who was sent to me by Dr. Maybury, of Kenmare. The tumour grew on his right orbit within the lower lid, occupying the inferior sinus of the conjunctiva, while the mass grew forward in front of the cornea, but without involving it. It was so placed, however, as to intercept the range of vision, but by looking sideways one could see that the cornea was perfectly sound. It projected into the orbit, and its black colour was clearly seen through the clear conjunctiva, so that its nature was as easily recognised. The motions of the globe were unaffected by it, except so far as they were checked by its pressure against the globe. Many of the movements could be performed without difficulty. The man's sight was perfectly good; he had fine clear eyes, very dark in colour, but although the globe was somewhat displaced his sight was perfectly unaffected. He had neither double vision nor any derangement

of vision. He had evidently a melanotic tumour of the orbit, closely related to the globe; and, as everyone knows who is familiar with the surgery of the organ, such tumours are prone to spring from the choroid coat of the eye, and, escaping externally by absorption of the sclerotic, to project into the orbit or against the lids. I made a most careful examination of the globe with the ophthalmoscope, but was not very successful. However, Mr. Storey examined the man with the aid of suitable light in the ophthalmoscope room of St. Mark's Hospital. He agreed with me that the tumour probably grew from the choroid, but could not satisfy himself that there was any intraocular growth. An attempt had been made to remove the tumour, and it was removed in part about six months ago. The man first noticed it in May last, and some time about August following, when it was very small—not larger than a hazel nut—it was partially removed in Cork. It recurred, and the conjunctiva of the upper lid, which was entirely remote from the tumour and the subconjunctival tissue, became melanotic. Whether this was congenital or not I cannot say. The subconjunctival mucous tissue was distinctly mottled black, and looked as if, in slipping over the tumour, as the upper lid did, it had become contaminated—just as in malignant growth of the liver, when a hepatic tumour presses against the peritoneum, we see tubercles of infection on the opposing surface. Whether this was congenital or acquired melanosis of the subconjunctival tissue I cannot say. My great anxiety was that the tumour might turn out not to be connected with the globe. We operated, leaving this an open question. I found that it was intimately connected with the palpebral fasciae and the tarsal cartilages. On dissecting with care I approached the globe and came on a distinct rounded facet, where the globe rested against it, and I was able to disconnect it without any wounding of the sclerotic. The sclerotic, when the tumour was removed, appeared perfectly clean and white. The wound healed immediately, and we sent him to the country a few days afterwards without his having sustained any injury to his vision or disturbance of the globe, except that the operation narrowed the gape of the eyelids. The tumour, examined microscopically, proved to be a melanotic sarcoma with spindle cells, the black deposit being extremely abundant, necessitating a very thin section in order to see its details. At the surface of the auditory meatus there was a slightly enlarged lymphatic gland. The exposed surface of the tumour was slightly ulcerated, and immediately after the removal of the tumour the glandular enlargement in front of the ear disappeared, and we could detect no other contamination.—January 17, 1880.

Myoma of the Prostate Gland: Pyelonephritis Parasitica (Klebs).—DR. Foor said: The specimens which he was about to lay before the Society were not so remarkable for their rarity as for their typical character.

They illustrate the effects of chronic prostatic disease upon the bladder, ureters, and kidneys. He had here a very marked example of the so-called hypertrophy of the prostate, with a thickened and fasciculated bladder, dilated ureters, and sacculated kidneys studded with abscesses. The result of repeated examinations of similar hypertrophies of the prostate has been to establish the fact that they are most frequently myomata, and this specimen accords so closely with the descriptions of prostatic myoma given by Virchow and Billroth that he had not thought it necessary to examine it microscopically. The principal tumour occupies the favourite situation of prostatic myoma—the postero-superior portion of the gland—because hereabouts the muscular tissue is most abundant, descending from the apex of the trigone to the neck of the bladder. The kidneys are each double the usual size, weighing each 10 oz. The surface, on removal of the capsule, was frayed and pitted with superficial abscesses—in fact, was studded with purulent foci. The cortical substance was also studded with abscesses with ragged edges and irregular outlines—in all probability the result of inflammation excited by bacteria which wandered from the pelvis of the kidney into the uriniferous tubules. Such a cause of pyelonephritis is fully recognised by Klebs, who calls it *P. parasitica*. It must remain uncertain how much of these renal changes was due also to the effects of the retention and ammoniacal decomposition of the urine. The man from whom these parts were taken was fifty-eight years of age, and had long suffered from urinary disease. Twelve years before his death he had learned to pass a catheter for himself, and continued to do so till the instrument broke. He sought admission to hospital for dysuria and rectal uneasiness. The urine during his stay in hospital was that of chronic cystitis—alkaline, offensive,ropy, and loaded with mucus and phosphates. For thirty-six hours before his death—which took place quietly, as if from exhaustion—he was somnolent. The preparation shows the cavity of a large abscess between the bladder and the rectum. As to the nature of the tumour, some one might think that it was of a papillomatous nature. In the last session or the one before it, he showed a remarkable example of papilloma engaging the orifice of the urethra and the bladder, and, on section, it had the appearance of a brush; and it had been also attended (as they often are) with great haemorrhage. As to the adenomatous element in the tumour, there was always some adenoma mixed with myomata in this region—not here the main constituent of the growth.—*January 31, 1880.*

Scirrhus of the Pylorus, with Secondary Carcinoma of the Peritoneum and of the Pleura.—DR. DUFFEY said: The specimens exhibited were removed yesterday from the body of a woman, aged sixty, who died early the same day. She was admitted into Mercer's Hospital under the care of

one of my colleagues on the 8th of January, and only came under my notice two days before her death. She was a tall and gaunt emaciated woman, of a sallow colour and cachectic appearance and wrinkled face. It was stated that she was not averse to a glass of whisky every day, especially early in the morning. She was a dealer by occupation, and came from Arklow. I was unable to ascertain any particulars as to her previous medical history, or the duration of her fatal illness. Her chief symptom while under my observation was persistent vomiting. This vomiting, as I saw it on two or three occasions, seemed to occur without effort, or without any previous nausea, and succeeded the ingestion of any substance, solid or liquid, into the stomach. She suffered also from intense thirst, and had a dry, brown-red tongue. There was marked constipation and extreme debility. She complained of but little pain in the abdomen, even on pressure. It was very easily ascertained that there was a large amount of fluid in the peritoneal cavity. Palpation gave a sensation of diffused and irregular hardness all over the distended abdomen, especially in its lower third; but there was no distinct evidence of any tumour, except in the right iliac region, where the swelling had more the character of a faecal tumour, being in the course of the colon, and of a softer, more doughy feel than elsewhere. There were no enlarged veins on the abdomen, no hardness about the umbilicus, and the glands in the groin were but slightly perceptible. The heart was normal, the respiration easy and tranquil, and there was no cough or dyspnoea. The urine was non-albuminous and clear, and there was no jaundice or oedema of any portion of the body. The diagnosis at which I arrived was that the case was one of visceral cancer with faecal accumulation. On *post mortem* examination the body was found to be extremely emaciated and of an earthy yellowish colour. There was a considerable quantity of serous straw-coloured fluid in the abdomen. The inner surface of the parietal peritoneum was thickened and studded over with numerous hard, grayish-yellow, tubercular-like nodules, varying in size from a millet seed to that of a pea. These were scattered all over the peritoneum in every direction. The small intestines, collected into a mass, between the umbilicus and the pubes, were firmly adherent to each other and covered with miliary deposits, so as to give the sensation of a hard irregular tumour. There was abundance of lymph also on the portions of the intestines which adjoined the peritoneum. The large intestine in the right iliac region was filled with softened faeces, which gave the doughy feel noticed during life to the touch. The omentum was shrivelled up into a hard thickened mass, and was firmly adherent to the stomach. The latter viscus was not much altered in its anatomical position; its mucous membrane bore evidence of chronic congestion, and was, in some places, highly vascular. The pylorus was invaded by a large, thick, and gristly mass of scirrhus. The surface of

the gall-bladder was spotted over with similar miliary nodules to those already described. The liver, however, appeared, strange to say, to have escaped any malignant deposit. The hepatic ligaments were thickly studded with the same deposit, and the spleen, which was adherent to the stomach, was coated in the same way. The mesenteric glands, as far as I was able to see, were not enlarged, but I cannot ascertain that directly yet. The kidneys appeared to be perfectly healthy externally, and so was the uterus, which, however, had the shrivelled atrophic appearance usual in old women. Passing to the thorax, there was double hydrothorax, the emphysematous lungs floating in a large quantity of clear straw-coloured fluid. The pleura covering the lower lobes of both lungs was studded with growths similar to those in the peritoneum. On both the abdominal and the pleural surfaces of the diaphragm there was distinct evidence of these growths also. The right side of the pleura costalis was free from them, while the left side was quite roughened to the touch by the number of these deposits upon it. In the posterior mediastinum was a large piece of thickened tissue with these growths upon it also. The heart was perfectly healthy, as far as could be seen by the naked eye. The primary disease in the case, I take it, was in the stomach—scirrhus of the pylorus, as in the majority of cases, being the form of the disease affecting that organ. The liver, contrary to the general rule, appeared to have escaped, for in about one-fourth of the total number of cases of cancer of the stomach the liver also is affected. Nor was there any cancer of the uterus. The carcinoma of the peritoneum, as in the majority of cases, was secondary to the primary disease of the stomach—the disease obtaining access to the peritoneum through the lymphatics. In the same way the complication of cancerous pleurisy may be explained by the disease passing, probably, through the canaliculi in the diaphragm (described by Recklinghausen) into the pleural cavity.* The hydrothorax may be ascribed rather to the cachectic condition of the patient (the hydrops cachecticus) than to the pleuritic affection. The age and sex of the patient are in accord with former observations—as to the greater frequency of peritoneal cancer in women than in men, and as to the decade in which the disease is most prevalent. Bauer states that between the ages of fifty and sixty cancer of the peritoneum occurs more commonly in females than in males; and out of 40 cases collected by Petrini^b 11 were patients of between fifty and sixty years of age, and of these 7 were females and 4 were males.—February 7, 1880.

* Cf. Ziemssen's Cyclopædia. Vol. IV., p. 598.

^b Loc. cit. Vol. IV., p. 337.

THE BOSTON
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President—PROFESSOR DILL, M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

November, 1879.

PROFESSOR DILL, President, in the Chair.

Notes upon a Few Cases of Hernia. By J. WALTON BROWNE, B.A., M.D.,
M.R.C.S., Eng.; Surgeon, Belfast Royal Hospital; Surgeon, Belfast
Ophthalmic Hospital.

SINCE my appointment as surgeon to the Belfast Royal Hospital in 1876, I have operated upon, in private and hospital practice, twenty cases of strangulated hernia—viz., twelve cases inguinal, seven femoral, and one umbilical. Of my twenty cases eleven died. Upon looking over my case-book, I find six cases were almost moribund before being brought under notice.

I may just mention that from the 1st January, 1850, to the 31st December, 1875, ninety-nine cases of strangulated hernia were operated upon at the Belfast Royal Hospital, of which thirty-six died. My patients ranged in age from ten weeks to eighty-four years.

In the after-treatment of all the cases, with the exception of those which were moribund, opium and ice-poultices, or ice-bags, were used.

Immediately after the operation the patient is at once put upon opium, dose being moderated according to the age; and ice-poultices—i.e., ice broken up into small fragments, and mixed with a quantity of saw-dust—or ice-bags, which I prefer, are placed over the abdomen, a piece of lint intervening between the bag and skin. At the same time the patient is kept upon spoon diet. The ice and opium are continued as long as any pain or tenderness upon pressure over the abdomen is experienced. I have great faith in the application of ice to the abdomen where symptoms of peritonitis threaten after operations for hernia, and recently I have used ice-bags in all cases of injuries of abdomen in the early stages, at once discontinuing their use should any symptoms of depression occur. A practical paper, “On the Local Use of Cold in Abdominal Inflammations,” appeared in *The Lancet*, February 26, 1876,

by Dr. Eade, of Norfolk, in which he advocates the local use of cold in preference to warm applications in nearly all cases of inflammation of the abdomen.

Dr. Eade considers "the *modus operandi* is to abstract heat, to benumb exalted sensibility, and to contract the dilated and semi-paralysed vessels; and its especial effects have seemed to be to diminish abdominal distension, to control the volvulous writhings of the bowels, and thereby to relieve both pain and tenderness."

At the end of five days I like to get the patient's bowels to act, and with that view cease the use of opium, provided the pulse and temperature are not much above normal. As a rule, with the cessation of the opium the bowels act spontaneously, and if they do not do so in twelve hours, I order an enema of turpentine and castor-oil, as, no doubt, frequently the safety of the patient depends upon procuring evacuations from the bowels. To my mind it is very important that we should obtain an evacuation of the contents of the intestines in all cases of hernia after a certain period, but especially in elderly and fat people should we be doubly anxious, as Mr. Jordan, of Birmingham, in *The British Medical Journal*, April 26, 1879, states that the cause of death after hernia operations is frequently due to fatty change and failure of the muscular wall of the gut. Mr. Jordan shows that, upon *post mortem* examination of some of his fatal cases of hernia, the intestinal canal was singularly and uniformly yellow, and everywhere enormously distended; and the muscular wall, when microscopically examined, was seen to have undergone fatty degeneration.

In some cases where the patient suffered much from flatulent distension about the third day, in addition to using turpentine stapes to the abdomen, a rectal tube has been passed with much benefit. When chloroform has been the anaesthetic used, troublesome symptoms after the operation are nausea and vomiting. I have always prescribed, with much benefit, a cup of very strong tea—a practice advocated by Dr. G. H. B. Macleod, in *The British Medical Journal*, July 8, 1876. In all my cases the sac was opened, with the exception of one case of femoral hernia, to be alluded to further on.

When the strangulation is of several days' duration—and it is in such cases, as a rule, we are called upon to operate in hospital practice—I like to open the sac and see the contents, also where the symptoms of strangulation from the very first have been very acute. Although the stricture is frequently external to the sac, yet the neck of the sac itself may form the stricture. Adventitious bands may remain inside; and as length of time is not an absolute criterion as to the state of the contents of the sac, but rather the tightness with which the bowel has been caught, you cannot tell with certainty when to open the sac, and when to leave it unopened. In all cases of femoral hernia I would be inclined

to open the sac, as it is in this form of hernia we so frequently meet with omental sacs, strangulating the bowel.

The late Mr. Mauder, in a clinical lecture at the London Hospital (*Lancet*, January 13, 1877), states that surgeons are pretty well agreed that it is immaterial whether the sac be opened or not in femoral hernia.

In the division of the seat of stricture in all the cases, with the exception of one, where I accidentally wounded the intestine, I used the hernia knife introduced into practice by Dr. Alexander Patterson, Surgeon to the Western Infirmary, Glasgow, and described by him in *The Glasgow Medical Journal*, February, 1873. Dr. Patterson, in describing his knife, says:—"It differs from Sir A. Cooper's simply in the blunt, pointed part of the knife having a quarter turn given to it, so that the flattened point passes more readily under the stricture, while its breadth flattens and pushes the gut aside as the cutting part of the blade follows."

A knife somewhat upon the same principle is the one invented by Dr. B. W. Richardson, of the Adelaide Hospital, Dublin, and described by him in *The Dublin Quarterly Journal*, November, 1869.

I have found Dr. Patterson's knife especially serviceable in operating upon femoral hernia, where the stricture is very tight; the point of the instrument being slightly wedge-shaped, is readily insinuated under the stricture. It will also be found useful in cases of inguinal hernia, where the stricture is deeply seated, and a large mass of intestine is prolapsed; for it is in such cases that we dread wounding the intestine. Here, by placing the forefinger at the point of stricture, the intestines are pushed aside, and the knife can be slipped along the palmar surface of the finger, and the stricture divided; the blade being inserted with the cutting edge upwards, there is no risk of the bowel being wounded. After division of the stricture I invariably pull down into the wound a portion of bowel from the abdomen, in order to see that the intestine is perfectly free, and have a view of the strictured portion. When about to return the bowel into the abdominal cavity, no great pressure should be used; and in three of my cases the hernia knife was re-introduced to enlarge the opening. It is always pleasant to feel the intestine, as it were, glide away. After all the intestine has left the sac, I follow the practice inculcated by my distinguished teacher, Professor Gordon, Belfast—"Never push the finger up into the abdominal cavity; satisfy yourself that the canal is clear, that is quite sufficient."

You will remember that I told you six cases almost moribund had been operated upon. You may reasonably ask me—Why operate in such cases, and thus increase your percentage of deaths? My answer is that I have seen cases operated upon which were deemed quite hopeless, nevertheless they recovered; and I well remember a woman, aged seventy-six, being admitted into the hospital in 1868, when I was House

Surgeon, suffering from a strangulated femoral hernia of seven days' duration ; she was very weak—in fact, almost pulseless. Mr. MacCormac, now of St. Thomas's Hospital, London, operated, and the patient recovered. This case made such an impression upon my mind that in almost all cases of strangulated hernia, no matter how long the bowel had been constricted, I would be inclined to operate, and give the patient the chance of recovering even with an artificial anus.

Sir A. Cooper, in his *Surgical Lectures*, states that "if the pulse be so small as to be scarcely perceptible, and the countenance anxious and sunken, no time is to be lost; but even under these circumstances, and with hiccup superadded, I have known the operation succeed." And in the next paragraph he says:—"Indeed there is scarcely any period of the symptoms which should forbid the operation."

Sir James Paget, in his *Clinical Lectures and Essays*, when speaking of strangulated hernia and the various symptoms demanding operation, states at p. 126:—"A patient must not be allowed to die with a strangulated hernia, if by any means whatever the strangulation can be relieved, and you must not be averted from the operation by any consideration of the number of deaths that follow it." And again, at p. 148, Sir James says:—"I have had to operate on patients already dying; I could not refuse to operate, for I could not be certain that it would be useless."

Having the opinions of two such distinguished men to guide us, I think we are justified in operating in all cases of strangulated hernia, no matter how hopeless the case may appear.

My last eight cases were performed with rigid antiseptic precautions, and I must bear my humble testimony to the great benefits it confers upon the surgeon, and also upon his patients.

I do not intend to give you a detailed history of my twenty cases, but only a short account of seven or eight, which, either differing from the usual condition of matters or from the occurrence of some rare complications, may interest you.

CASE I.—*Congenital Strangulated Inguinal Hernia in a boy, aged ten weeks ; Operation ; Recovery.*

M. M., aged ten weeks, a weak, delicate child, was admitted into hospital on 31st August, 1876, suffering from a strangulated inguinal hernia, of three days' duration. Upon examination I found a right inguinal hernia, strangulated; the abdomen was very tympanitic, and tender upon pressure. The little fellow vomited all food, and the bowels had not been opened for three days.

I at once ordered the child a warm bath, and tried the taxis. Following out the practice advocated by some surgeons, especially in strangulated hernia in children, of elevating the pelvis and legs, I was unsuccessful; at once operated; the usual incisions were made in the

axis of the hernial tumour; the sac opened; the hernia proved to be of the congenital variety, and contained intestine and omentum. Owing to the age of the child, I had extreme difficulty in introducing the tip of my little finger into the canal, the stricture being at the internal abdominal ring. When the stricture was divided, as customary, I pulled down a portion of intestine to view the seat of stricture. The child suddenly made an expiratory effort, and down came two feet of intestine. The mass was so large I had great difficulty in manipulating it through the canal, and before succeeding it was necessary to enlarge the opening, and to wrap the prolapsed intestine in fine cloths wrung out of warm water. After the application of the warm water, the intestine seemed, as it were, to shrink up, and reduction was easily effected. The youngster made an uninterrupted recovery.

Remarks.—At the time I operated (August, 1876) I could not find recorded a successful operation in a patient so young. Mr. Erichsen (*Lancet*, 1872), I find, operated upon a child six weeks old, but the child died at the end of a month from a low form of peritonitis.

Within the last two months I saw reported in the journals a case of successful operation for strangulated hernia in a child fourteen days old. As regards the elevation of the pelvis in conjunction with the taxis, I once heard a distinguished London surgeon state that he had never found it necessary to operate for strangulated hernia in children—that he was always able to reduce the gut by taxis. However, in my case elevation got a good chance, but failed.

Since the occurrence of this case I have frequently found when a large mass of intestine was down, that by enveloping it in cloths or sponges wrung out of warm water, the volume of the prolapsed portion was almost at once reduced in size, and easily returned by taxis.

CASE II.—*Strangulated Femoral Hernia ; Omental Sac.; Death.*

A woman, aged fifty years, was admitted into hospital under my care, suffering from a right strangulated femoral hernia; symptoms of strangulation had continued four days. Upon examination I found a tense femoral hernia in right groin. Administered chloroform; tried taxis unsuccessfully; at once operated. The usual incisions were made, the fascia propria exposed, then the sac. My colleagues requested me to divide the stricture external to the sac; I did so, and by very gentle taxis emptied the sac. After the operation the symptoms of strangulation continued, and in three days the patient died.

Upon *post mortem* examination we found general peritonitis, and above the femoral opening a small mass of omentum, in the centre of which was concealed a piece of intestine about the size of the tip of the forefinger.

Remarks.—Had I the luck to open the sac in this case, the “omental

sac" would have been found, and the intestine easily liberated. It is in cases of femoral hernia, as I previously mentioned, that we most frequently meet with omental sacs, and since the occurrence of this case I always recommend the opening of the sac in femoral hernia.

The seat of stricture, as a rule, in femoral hernia is to be found at the falciform process of the saphenous opening—Hey's ligament—and not at Gimbernat's ligament. This fact has always been taught by Professor Gordon, and was long since pointed out by Sir A. Cooper. According to Cooper, the stricture may be found both at Hey's ligament and under the crural arch of Poupart's ligament.

A practical point to observe in operating upon cases of femoral hernia is the layer of adipose tissue which lies between the fascia propria, or sheath of the femoral vessels, and the sac. Sir A. Cooper states that he has known the fascia propria to be mistaken for the hernial sac. In fat subjects divide the strictures until you come upon the "fatty layer," and you have the sac underneath.

CASE III.—Strangulated Inguinal Hernia ; Accidental Wound of Intestine ; Recovery.

W. R., aged fourteen years, admitted August, 1879, suffering from a right strangulated inguinal hernia. He had been in hospital twelve months previously, suffering from strangulation of the intestine, when the taxis was used successfully. He had not worn a truss, although one was applied before he left hospital.

Upon admission a very tense inguinal hernia, dull upon percussion, was found. An omental hernia was diagnosed, owing to the dulness. The symptoms of strangulation were urgent, and immediate operation, after an unsuccessful trial of taxis, was determined upon. The usual incisions. Opened sac; it contained a large mass of intestine, and no omentum. The seat of stricture, at the internal abdominal ring, was divided with difficulty. When we endeavoured to replace the intestine, the opening was considered too small; and when introducing Sir A. Cooper's knife to enlarge the opening, I wounded the intestine. Almost immediately arterial blood came in a good flow from the wound. Upon examination of the gut an incised wound, half an inch long, but only involving the peritoneal and muscular coats of the intestine, was found; the mucous membrane of the bowel was prolapsed, as it were, to fill up the gap. The vessel was easily secured by Pean's artery forceps, and torsioned; no suture was used. After the operation I at once commenced the use of opium, and applied ice-bags over the abdomen; stopped opium upon sixth day, when bowels acted spontaneously. The boy's temperature and pulse were never above normal, and he made a rapid recovery.

Remarks.—Wound of the intestine, a very serious accident, is not of frequent occurrence. Cases are recorded where the most skilful surgeon

has accidentally incised the intestine, and no doubt the gravity of the injury depends upon the fact whether or not the wound penetrates the cavity. Lawrence states :—"A superficial wound—that is, one which does not penetrate the cavity—is of no consequence; the intestine may be returned without the slightest fear of unpleasant results." In my case the wound did not penetrate, and I simply restrained the bleeding. In operating upon this case, I used Sir A. Cooper's hernia knife, and I fully believe, had Patterson's or Richardson's knife been used, the accident would not have occurred. You are all aware how it is recommended in works on surgery to introduce Cooper's knife—lying flat upon the forefinger until the seat of stricture is reached, then to turn the cutting edge upwards. You will remember I told you a large mass of intestine protruded, and the stricture being very deep at the internal ring, it was scarcely possible to see what was being cut. The intestine slightly overlapped my finger, and when re-introducing Cooper's knife in the manner recommended, the gut was wounded.

I think that Patterson's knife is specially of service in cases where a large mass of intestine is in the sac, and where the seat of stricture is deeply situated. The forefinger acts as a guide for it to the point of stricture, and at the same time pushes the intestines aside. The knife is introduced along the finger with cutting edge upwards, and by keeping the blade of the knife upon the centre of the finger, and, just before dividing the stricture, requesting your assistant to make the parts at the neck of the sac tense by gently pulling down the prolapsed bowel, all danger of wounding the gut, in my opinion, is avoided. As regards the diagnosis of this case, you see a mistake was made—from the dulness of the tumour it was thought to be an epiplocele. From my limited experience I consider it almost impossible to accurately ascertain the contents of the sac before operating.

CASE IV.—*Strangulated Inguinal Hernia; Intestine abraded of its Peritoneal Coat; Recovery.*

J. L., aged thirty-six, admitted to hospital June, 1879, suffering from a large scrotal hernia upon right side. Upon consultation, immediate operative interference was deemed necessary. Chloroform administered, and the usual incisions made. Opened sac; it contained four feet of small intestine of a good colour, with the exception of the portion at seat of stricture, which was very dark. After division of the stricture I endeavoured by gentle taxis to reduce the bowel, but, owing to the large mass, was unsuccessful. Sponges wrung out of warm water were then applied, and the volume of the mass almost immediately became reduced, and at the expiration of ten minutes all the hernia was replaced. Just before the last portion of gut was returned I noticed that it was denuded of its peritoneal coat to the extent of a square inch. The part was

washed with a weak solution of carbolic acid, the peritoneum spread out over its former situation, and reduction proceeded with. The patient never had a bad symptom, and left hospital at the expiration of sixteen days.

Remarks.—It is rare to have such a mass of intestine prolapsed as was in this case. The case teaches us to be very careful in the use of the taxis when endeavouring to replace the bowel, and it also shows how much handling the intestine will frequently bear without any ill results.

CASE V.—Strangulated Umbilical Hernia mistaken for a Carbuncle.

Mrs. R., aged fifty-seven, was sent into the hospital, May, 1877, reported to be suffering from a carbuncle of the abdomen. My resident pupil was so confident that the poor woman was labouring under a carbuncle that he had strips of soap plaster ready cut to commence treatment at the hour of my visit. Casually placing my hand over the tumour, which occupied the umbilical region, I felt distinct gurgling when a little pressure was made. The existence of a hernia was now suspected; and, upon questioning the patient, I ascertained she had been vomiting incessantly for seven days, and that the bowels had not acted for five days. She also told me she had noticed a tumour the size of a walnut occasionally, at the umbilical opening, during the past few years, but that it had increased to the present size (about the size of half an orange) one week since. Certainly the tumour much resembled in appearance and coloration a carbuncle. I now saw we had a case of strangulated umbilical hernia to deal with. Tried the taxis, and immediately the tumour became reduced in size by a half; but there remained a hard mass which could not be replaced. The patient being very weak and evidently sinking, I summoned a consultation, when it was decided to operate at once. Made a longitudinal incision over the hernial tumour, opened the peritoneum, and found a mass of omentum highly congested. Upon gently raising the omentum a portion of intestine was seen to be glued to its lower surface. The adhesions between intestine and omentum were easily broken down. The umbilicus was incised in the median line upwards, and the omentum left *in situ*. The patient died in twenty-four hours.

Remarks.—This case teaches us to be very careful in diagnosis. We all know how rare it is to find a carbuncle upon the anterior portion of the body—still they do appear there; and a tumour occupying the umbilical region should lead us to inquire into its character. In Lawrence's treatise on "Hernia" (p. 589) you will see recorded cases of fatty tumours on the linea alba which resembled ruptures, and were operated on as such.

CASE VI.—Strangulated Scrotal Hernia diagnosed to be a Hæmatocele, and tapped.

A. R., aged fifty years, was brought to the hospital several months since by a medical man, who informed the House Surgeon that the patient was suffering from a scrotal tumour—probably a hæmatocele—which he had tapped with the ordinary hydrocele trocar and cannula. As very little blood flowed he considered the cavity of the tunica vaginalis to be filled with blood-clots. The patient upon examination presented a rounded tumour of the scrotum the size of a child's head; the skin covering it was very dark, and at a distance it very much resembled a hæmatocele. In addition, the tumour was dull upon percussion, very heavy, and not translucent. The right inguinal canal was occupied by a swelling which could only be felt upon very deep pressure.

At the lower part of right side of scrotum there was a puncture, through which a dark fluid oozed, having a faecal odour. The patient when seen by me, five hours after admission, was almost pulseless and cold. Before my arrival the House Surgeon had applied warmth and given stimulants. The case was very puzzling at first sight. There was no history of injury to the scrotum. I happened to examine the man's abdomen, and found that he had been recently blistered and treated for "inflammation of the bowels." He denied ever having a rupture and had not worn a truss, but told me that twelve days since he was suddenly seized with vomiting and pain in the abdomen. At the same time he observed the "lump" in the scrotum. A medical man was called in, who told him he had inflammation of the bowels and stomach. At the expiration of twelve days, the vomiting and other urgent symptoms continuing, a second medical man was sent for, who now had all his attention directed to the scrotal tumour, which he diagnosed to be a hæmatocele, and punctured it. The same afternoon the patient was sent into hospital.

A consultation being summoned, the diagnosis, strangulated inguinal hernia, was come to, and although no doubt the intestine was gangrenous and the patient very low, we thought an operation might give him a chance.

The usual incisions were made. Opened the sac and found upwards of four feet of intestine in the scrotum. It was quite gangrenous, and ruptured at several points. We saw the opening which had been made by the trocar. The poor fellow only survived the operation eight hours.

Remarks.—At first sight the case much resembled one of hæmatocele, and, in addition, the fulness along the inguinal canal led to the belief that possibly it might be a case of hæmatocele of the tunica vaginalis and diffused hæmatocele of the cord. However, when the history was obtained all doubts regarding the diagnosis were at an end.

As bearing upon this case you will see recorded in Curling's Treatise on "Diseases of the Testis" a case related by Sir A. Cooper, in which a man was brought into St. Bartholomew's Hospital suffering from a scrotal tumour, which was considered a hernia. Owing to some symptoms of strangulation being present an operation was performed. The sac opened, and no intestine found; blood, "partly fluid and partly grumous, burst forth." The case was a hæmatocoele of the tunica vaginalis and cord.

CASE VII.—*Displaced Inguinal Hernia.*

A. J., aged thirty-eight, admitted into hospital 18th September, 1879, suffering from a strangulated hernia. We found that he had suffered for years from a reducible hernia, and had worn a truss. One week since he noticed the hernia had a constant tendency to slip down behind the pad unless carefully watched.

To-day when at work a larger lump than usual suddenly appeared behind the pad. He was at once seized with very urgent symptoms of strangulation, and eight hours afterwards was sent into hospital. Upon looking at the hernial tumour as he lay in bed, I was at once struck by its peculiar shape. Upon examination we found the left inguinal canal and upper part of left scrotum occupied by the hernia, and, in addition, there was a swelling quite exterior to the internal abdominal ring, situated in the abdominal wall. I now suspected we had a case of displaced hernia to deal with, as a similar case occurred in the hospital when I was House Surgeon.

The patient when visited felt easy—temperature, 98·6°; pulse, 80; no vomiting—in fact, all the urgent symptoms had disappeared since his admission. Ice-bag was applied to the hernial tumour, and opium given. Six hours following admission vomiting recommenced, and, after consultation, I operated. Usual incisions were made; came down to sac, opened it, and introduced my forefinger along the intestine to feel for seat of stricture, but was surprised to find my finger went into a space, which I at first considered to be the abdominal cavity. I now drew down intestine, and as it came outside the scrotum the tumour exterior to the inguinal canal was seen to disappear. It was now quite apparent that my finger had been in a space between the abdominal muscles occupied by the hernia. Now, following the intestine very deeply, a stricture was found at the internal abdominal ring. It was divided and the hernia reduced. The intestine was of a dark claret-colour, and upon its surface several blood-clots were found—the result of efforts at *taxis* before admission. The patient died upon the fourth day from a low form of peritonitis.

Upon *post mortem* examination I found general peritonitis and a sac between the internal oblique and transversalis muscles, which had been occupied by the hernia.

Remarks.—Cases of displaced hernia are rare. As you are aware they may occur when you have a hernia complicated with an undescended testicle, the testicle occupying the canal and preventing the intestine passing into the scrotum. The intestine, being prevented from entering the canal, then stretches the neck of the vaginal process into a sac placed between the tissues of the abdominal walls, either upwards or downwards, between the skin and muscles, the muscles themselves, or between the muscles and internal abdominal fascia, forming the intra-parietal, intermuscular, or interstitial sac—*hernie en bissac* of the French, additional sac of Birkett (Bryant).

Although an undescended testicle appears to be the most common cause of this form of hernia, it may also be produced by a badly fitting truss, which, pressing only upon the external abdominal ring, allows the intestine to descend into the inguinal canal. It cannot escape at the external abdominal ring, and, as time proceeds, it gradually stretches the neck of the tunica vaginalis before it, forming an "intra-parietal" rupture.

In my case, no doubt, the poor fellow had worn a badly fitting truss for years, and instead of the pad pressing upon the internal abdominal ring and canal, it had pressed upon the external ring, and permitted of the gradual development of the additional sac.

Case VIII.—Strangulated Congenital Inguinal Hernia in a Girl; Sac contained Omentum, Intestine, and the Left Ovary.

P. A., aged ten years, was admitted into hospital 12th August, 1879, suffering from a strangulated inguinal hernia, the symptoms of strangulation having existed for thirty-six hours.

Her mother stated that the rupture was noticed shortly after birth, but gave no trouble until the child was three years of age, when it became larger and painful at intervals, but was always easily reduced. When the child was five years of age the hernia became strangulated, and the mother was unable to return it. She was admitted into the Children's Hospital, where it was reduced, and was discharged wearing a properly fitting truss. After a time the truss was left off, and the rupture came down occasionally as before, up to March, 1878, when symptoms of strangulation again occurred. She was admitted into the Royal Hospital under my care, when reduction was easily effected, and she left hospital with a truss applied. The use of the second truss was discontinued, but the hernia did not again come down until the 10th August, 1879.

When admitted into hospital on the 12th August, 1879, I found a tumour at the external abdominal ring as large as a hen's egg, tense to the feel, and painful. Symptoms of strangulation being urgent, the patient was put into a warm bath, had an opiate, and taxis tried unsuc-

cessfully. Chloroform was now administered ; taxis a second time being tried without success, the operation was proceeded with. The sac was opened, and instantly a quantity of omentum, very much congested, came into view ; behind the omentum lay a small piece of intestine. The stricture, which was very tight, was now divided ; the intestine returned. The omentum, measuring four inches long and two inches wide, owing to its congested appearance, was ligatured with a double catgut ligature, and cut off close to the neck of the sac ; the pedicle and ligature were then returned into the abdomen. Upon now examining the sac I discovered at its upper part a structure much the size of a small lymphatic gland. When this was carefully examined we found it to be the left ovary and broad ligament. It was some time before an opinion was pronounced, and it was only after the parts had been drawn gently down that we satisfied ourselves regarding the identity of the ovary and broad ligament. The ovary was healthy in appearance, not being in the slightest degree congested, and it was returned into the abdomen. The entire operation was performed antiseptically. Ice-bags were applied to the abdomen after the operation, and opium in small doses administered. The pulse and temperature were never above the normal standard until the twelfth day, when a small abscess formed in the abdominal wall ; this was at once incised, and the child was discharged in three weeks' time, wound cicatrised, and wearing a truss.

Remarks.—Cases of hernia in which the ovary has been found in the sac are rare, no reference being made to it in the surgical works of Holmes, Erichsen, Fergusson, Paget, Bryant, Skey, or Gross. Lawrence mentions cases as having occurred in the practice of Pott.

At a meeting of the Medical and Chirurgical Society in 1864, Mr. Coote mentioned a case which had occurred at St. Bartholomew's Hospital. A woman was admitted into the hospital with a swelling in the left groin, and suffering from the symptoms of a strangulated hernia. An operation was performed. When the sac was opened it was found to contain some thickened omentum and the left ovary. At the same meeting Mr. C. Hawkins stated he had met with two cases in which the ovary was found in the hernial sac.

In the *Belle Vue Hospital Reports*, 1870, twelve cases of ovarian hernia are recorded by Dr. Hamilton, which were operated upon before a diagnosis was made.

In the "Transactions of the London Obstetrical Society" a case is recorded by Dr. Alfred Meadows.

In the *American Journal of the Medical Sciences* for October, 1877, Dr. Balleray, of New Jersey, reports a case of strangulated hernia which was operated upon, when neither intestine nor omentum was found, but the left ovary was lying near the lower part of the sac. Dr. Balleray also discusses the propriety of leaving the ovary in the sac, or returning

it into the abdomen after division of stricture. He says:—"The rule by which the surgeon is governed in the management of strangulated intestine, or omentum, is, I think, applicable to these cases." He considers when the ovary is but slightly congested it should be returned into the abdominal cavity. "But in cases in which, from long continuance of the strangulation, or excessive tightness of the stricture, the tissues of the ovary either are or are likely to become gangrenous, removal of the organ is, in my opinion, the proper course to pursue."

Those of you who have been reading *The Lancet* must have noticed in the "Transactions of the London Obstetrical Society," published in *The Lancet*, Oct. 11, 1877, a case of congenital inguino-ovarian hernia, reported by Dr. T. Chambers. The patient had noticed swellings in the groins for many years, and as they were occasionally subject to pain from knocks and injuries, it was determined to remove them, as they could not be returned into the abdomen. After removal they were subjected to microscopical examination, and found to be glandular organs, presenting the structure, not of ovaries, but of imperfectly developed testicles.

In the editorial remarks upon Dr. Chambers' case it is stated:—"Cases of inguinal hernia of the ovaries are rare; cases of congenital inguinal hernia of these organs are much more rare—so much so, indeed, that any case recorded as such should be looked upon with the gravest suspicion, unless positive anatomical proof of it be brought forward."

There is no doubt but my case was a congenital inguinal hernia, as the mother had noticed the protrusion almost from the child's birth.

In the examination of the contents of the sac I had the benefit of the experience of two distinguished Scotch medical men, who happened to be present at the operation, and we were all agreed upon the fact that, after the intestine and omentum were returned, there still remained in the hernial sac the left ovary and broad ligament.

Those of you who take an interest in the subject of ovarian hernia will see in the "Biennial Retrospect of Medicine and Surgery" (Sydenham Society) for 1871-72, a very practical paper upon the various varieties of the hernia, its complications and treatment, drawn up by Mr. Waren Tay, of the London Hospital.

COD-LIVER OIL AND CHLORAL.

A GERMAN medical journal states that a mixture of 1 part of chloral hydrate with 19 parts of cod-liver oil is much used by the Lisbon physicians. The oil is said to be more agreeable to take, is soporific in character, and under its use the night sweats diminish and the strength increases.—*Chemist and Druggist.*

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION,

CLINICAL RECORDS.

A CASE OF HYDROPHOBIA.* By J. MAGEE FINNY, M.D., Univ. Dub.; F.K.Q.C.P.I.; Visiting Physician to the City of Dublin Hospital.

THE case of hydrophobia which has been recently under your notice in this hospital seems a fitting subject for my lecture to-day.

Instances of hydrophobia are very rare. Some physicians, indeed, have never seen a case of this terrible disease, and go so far even as to doubt its existence. Though rare, unfortunately it is not rare enough, and hardly a year passes without cases being admitted into our metropolitan hospitals. Two such were admitted last year here, and this case, the subject of my lecture, is the third which it has been my fortune to meet.

Rabies (a term to be preferred to hydrophobia) belongs to the class of contagious diseases, and cannot be spontaneously developed in man, or transmitted except by direct inoculation of the virus to a broken surface of the skin and mucous membrane. It is conveyed by the bite of an infected animal—most commonly by a dog, though it may be by a cat or fox. The animal must be *rabid*, since the bite of an angry dog does not appear to cause it, and the virus—the nature of which is unknown, and which lodges in the saliva—is communicated by the bite, even though the dog at the time exhibits very few of the symptoms—in fact, while the disease is only commencing to develop. The importance of recognising this fact cannot be too strongly impressed on the public, as the popular method of immediately destroying a dog who has inflicted a bite leads to very great uncertainty as to the animal being rabid, and inflicts, most unnecessarily, for weeks and months, agonising suspense on the bitten person. The proper course to adopt is, that the dog who has bitten anyone should be confined for a fortnight and kept under observation, so that, should no other symptoms develop in that time, the patient may be reassured as to the innocuity of the bite, and the life of, perhaps, a valuable animal may be spared from superstitious immolation.

Once the poison is inoculated it remains in the system for an indefinite period, to which, similarly as in the case of the exanthematous fevers, the term of incubation is applied. One of the most remarkable points in the history of rabies is the long time this stage may last. No other infective matter remains latent so long. It usually ranges between eighteen to sixty-four days; it may, however, be prolonged to six

* A clinical lecture delivered in the City of Dublin Hospital, March 1st, 1880.

months, or even, as in the case of James M., to eleven months. There are, indeed, cases where the incubative stage is stated to be of several years' duration, but in such it is probable that during that time more than one bite was inflicted, although the last wound (the poisoned one) may have been the least severe—perhaps but a scratch—and, accordingly, overlooked.

During this stage of incubation the bitten individual, with the exception (in the case of adults) of the disquiet produced by a nervous dread of the disease, feels usually quite well. However, towards its close, be it long or short, a group of ill-defined symptoms develops, and the sufferer may complain of sleeplessness, restlessness, and neuralgic pains extending from the bite. This may last for one, two, or three days—rarely longer, and is followed by the marked characteristic symptoms of the stage of excitement. It is to this stage that the term hydrophobia is applied, and yet the sufferer dreads not the water, but he dreads, with a feeling of terror of the intensest nature (which must be witnessed to be realised), the peculiar spasms of deglutition and respiration which the attempt to swallow any liquid instantly induces. This state of nervous exaltation is carried in some to such an extent that spasms are induced by a breath of air, the opening and shutting of a door, or the sudden approach of anyone to the patient. During this stage appears another characteristic symptom—that of "spitting," the saliva being copious, frothy, and slimy. Our patient expressed the true reason of this constant expectoration, for, when expostulated with, he said "he was afraid to swallow his spittle, as it choked him." After this stage of excitement—which in adults may assume true mania, with, at times, a homicidal tendency—has lasted two or three days (very rarely four days), the stage of paralysis ensues, during which the distressing symptom of dysphagia may disappear, and a quiet, following the preceding wild excitement, may lead to the fallacious hope of recovery. It is, however, of very short and variable duration—a few minutes or hours—and it ends in death, which, even though expected, is often sudden.

The whole duration of the attack of rabies may, therefore, be considered of from three to four days. Of the total number of those dying of it, 59 per cent. die within the first three days.*

I shall now read the notes of the case of J. M., taken by Mr. Stuart Davis, and I claim your indulgence while I record the features of the disease in as succinct and yet in as full a manner as I can. My reasons for entering thus fully into the symptoms, and for detailing them at some length, are, that you may have them impressed upon your memory in a permanent manner; and, though the patient was seen indeed by most of you, the stage at which you saw him was not that in which you

* See valuable Report on Hydrophobia. By Dr. A. W. Foot. Dub. Journ. Med. Science, Oct., 1879.

will be called upon to make a diagnosis, and the (necessarily) hasty glimpse you had could not have proved sufficient to impress you with the full importance of the symptoms, or with the details of management.

CASE.—J. M., aged forty-two, married, cardriver, was admitted under my care into the City of Dublin Hospital on February 18th, 1880, suffering from hydrophobia.

The patient was a strong, stoutly-built man, about 5 ft. 9 in., of very intemperate habits, having had more than one attack of *delirium tremens*, and although he stated he has not, for the last fortnight, indulged too freely, he presented on admission many evidences of alcoholism, so as to suggest the idea, but only for a moment, that the case was really one of *delirium tremens*.

On being questioned he said he had got a bite of a dog three months ago. His friends, however, state that this was a mistake, as it was nearly a year ago since he was bitten, and on referring to the hospital register it was shown that on 18th March, 1879 (eleven months ago), the man was treated by the surgical resident, Dr. Finucane, for a bite on the ball of the thumb of the right hand, the wound being at the time freely cauterised with fuming nitric acid. A scar corresponding in situation was found on the right wrist. Dr. Finucane, who has a lively recollection of the man and circumstances, states that at the time of the bite the patient betrayed considerable alarm. At present he seemed to have forgotten all about it, for, until closely questioned, he never mentioned the bite, and when he did speak of it, he referred to it as a thing not worth noting. "What matter," he would say, "about the bite? it is well this long time; there is no pain in my hand or arm, and it has nothing to say to my distress here" (pointing to the throat just above the sternum).

I think it well to mention these facts as bearing upon the theory of some that hydrophobia is but a mental state, into which the patient works himself by brooding fear. Such a theory can gain no support from this case any more than it gains in the instances of infected bites in infants and young children.

On February 15th, the patient states, he was in his usual good health, except that he felt a little depressed, and was sleepless, and for these he accounted by a heavy drinking-bout the week before. That night, on going to bed, he complained of feeling "queer," and of a sensation of cold down his back, and of a burning heat in his legs. Neither then nor at any other time did he notice any shooting pains or sensations in the scar of the bite, or in the right arm.

On the next day, for the first time, he experienced some difficulty in swallowing, although he managed to consume on that day several glasses of spirits, as well as of other liquids.

On the 17th February the dysphagia was more decided; his fluids

were reduced to three glasses of whisky—not so much from actual inability to swallow as from the suffocating spasm which the act of deglutition provoked.

The day following (18th) he was admitted to hospital on the recommendation of Dr. Byrne, who saw him early that morning, and at once recognised the serious nature of the case. Thus he came under observation on the third day of his illness, if we date from the commencement of difficulty of swallowing, or the fourth from the end of the stage of incubation. He was accompanied to hospital by three friends, or boon companions, and when first seen he presented no evident appearances which marked him as ill. It was noted that his face was unshaven, for which he accounted by saying "he was afraid to shave." His pulse was 94, temperature 98.2°. The urine passed while in hospital was of a deep colour, acid, specific gravity 1028, and contained a trace of sugar and a small quantity of albumen. The quantity was small, and quite out of proportion to the amount of fluids he managed to drink.

The first sign of the disease he betrayed was while in conversation. Thus, when he replied, seemingly quite quietly and rationally, to questions put to him, he occasionally ended the sentence in a quick, loud, hurried manner; at the same time he would start up in bed, and shift his position, with a wild and staring look, exactly as if he were greatly startled. As soon as this passed, he would lie down again in a quiet and collected way, arrange his bed-clothes; and acknowledging that he was aware he had made a noise—amounting at times to a regular shout, to be heard all over the hospital—he would apologise by saying "he could not help it." Later on in the day his speech was so sudden, loud, and abrupt, and accompanied with a stammer, that it might, by an imaginative observer, be described as a "bark," and hence probably has arisen the popular idea of hydrophobics barking like a dog. In the spasms the inspiration was suddenly and rapidly repeated, followed by an expiration in which the sentence was hurriedly finished—very much as one might finish a sentence if, while speaking, a bucket of cold water were unexpectedly thrown over the chest and back. I took an opportunity of listening to the chest during one of these earlier spasms, and the stillness of the respiration reminded me much of the condition of the chest in whooping-cough. The pupils were watched during the attacks, and were noted to become dilated. When offered fluids at first, no spasm was induced; yet, as if aware of the risk of attempting to swallow, he generally placed the vessel gently out of his sight, saying "he would take a drink presently." If, however, he was urged and encouraged, the following was the usual course of events:—After several ineffectual efforts to bring the cup to his lips, during which his face assumed a terrified expression, he would suddenly dash it to his mouth (spilling a great deal over his clothes), and empty it at a long

draught down his throat; meanwhile his eyes started out of his head, his features being expressive of intense fear, and he would conclude the act by placing down the vessel (he broke nothing) in a hurried way; and panting and shouting, he would start out of bed and rush to the other end of the ward, regardless of restraint offered by his attendants. During this excitement he showed no intention to do injury to anyone, but simply to try to obtain relief by this muscular exertion. He did indeed, on one of these occasions, knock down one of his friends who attended him, but it was not intentional, for, when quiet, he expressed his regret.

As the disease advanced, and his thirst increased (due to the want of the natural lubrication of the saliva, which should be involuntarily swallowed, but which he spat out), his attempts to assuage his thirst by drinking became more frequent, and although he managed to get through nearly four pints of milk and beef-tea, it was at the cost of an almost continuous series of shoutings and jumpings out of bed as described. After these attacks it was sometimes with much difficulty he was induced to return to bed, and as the disease advanced the spasms came on without attempting to drink, and were induced by the approach of anyone, or the opening of the door. Between the paroxysms he was incessantly talking, wanted his clothes, and seemed to have illusions—imagined people were in the room, with whom he conversed. This condition was exactly that of *delirium tremens*, and as such symptoms of busy delirium are not common in rabies, I am inclined to attribute them to the toxic effect of the alcohol he had taken before admission. When spoken to, he came to himself at once, recognised his friends, and even recognised the hospital porter whom he had not seen for several months.

The line of treatment adopted may briefly be described as sedative. The patient was placed in a separate ward, attended by his own friends, and no one admitted except the medical attendants. Immediately after admission $\frac{1}{4}$ gr. morphia with $\frac{1}{50}$ gr. atropia was administered hypodermically, and the morphia was repeated in $\frac{1}{4}$ -gr. doses three times between 6 p.m. and 11 30 p.m., omitting the atropia. The first dose was followed by four hours' quiet and a couple of hours' sleep, the patient waking out of it in a tranquil state. The drug, however, seemed afterwards to lose its effect, similarly as it does in tetanus, so that with the last dose 10 gr. of chloral were hypodermically used. This was soon followed by sleep. When visited a couple of hours afterwards, Mr. Davis found him in a state of coma, in which the respiratory centres seemed involved, as the breathing was very remarkable—approaching that described by Drs. Cheyne and Stokes—and the face was purple and congested. With considerable difficulty, and after continued excitation of the skin by flagellation, and faradisation, he was roused out of this state, which was treated as a case of opium-poisoning. After some time the patient suddenly sat up, the peculiar unrhythmic breathing forthwith ceased, and

in about half an hour later he was exactly in the same condition he had been in four hours previously. During the unconsciousness the pulse ranged to 96 and the temperature to 100·2°.

Reflecting on these strange symptoms, I am not inclined to attribute them to the narcotism of morphia, but to a vascular congestion of, and perhaps minute haemorrhage into, the medulla oblongata. The reasons for this conclusion are:—(1.) The amount of morphia was by no means sufficient to produce deep narcotism, being but $\frac{1}{4}$ gr. administered in three doses, at intervals of an hour and a half between each. (2.) The usual tolerance of this and other drugs in hydrophobia. (3.) The absence of the deep stertor such as occurs in opium-poisoning, and the presence of a peculiar "ascending and descending" respiration, marked with great want of rhythm as to time. (4.) The sudden cessation of this un-rhythymical breathing. (5.) The rapidity with which the patient came out of it (two hours from the time the coma was discovered), without any subsequent drowsiness or lethargy, so soon as sensation and reflex action were thoroughly re-established. (6.) The absence of any marked contraction of the pupils.

After the former condition of the patient was re-established, chloral was given—80 grains in milk during the following three hours—and towards morning, as this seemed in no way to check the delirium and spasms, morphia, gr. $\frac{1}{4}$, and chloral, gr. 5, were hypodermically injected. His diet consisted of beef-tea and milk *ad libitum*, and six ounces of whisky.

After this restless night, in which little or no sleep was obtained, his condition on the morning the class saw him was one of mania, which was aggravated by the incautious entrance of several students into his ward, and still more by some few who, prompted by curiosity, though forbidden to enter, managed to peep in at him through the window.

Though always amenable to me and to Mr. Davis, who was indefatigable in his attention, he became terribly excited by the students, against whom he vowed the direst vengeance. This threat he seemed ready to put in force, for he got possession of a short iron poker, and, armed with this weapon, he posted himself on a chair opposite the door. This was about an hour before his death. He was then able to drink without spasm, although he still continued to expectorate. His pulse became very small and weak, the heart-sounds short and abrupt; his skin was cold and clammy, and he said the room was dark. That his end was approaching he seemed aware, for he tightly grasped my hand with his disengaged hand, and asked me if I thought he should recover. A short time afterwards he bid farewell to the friend who alone, out of three, nobly remained with him till his death, and spoke to him of their former friendship. He then allowed himself to be carried back to bed, and died without a spasm or convulsion.

Post mortem examination was made eighteen hours after death. The body was in a state of the most marked rigor mortis, with cadaveric staining of the dependent parts. A scar was noticed on the right thumb, and no other mark was discoverable, except a cicatrix along the lower jaw, whence a piece of bone had been extracted by Mr. Wheeler some six months previously.

The skull contents were alone examined. The calvarium was very thick; and firmly adherent to it along the vertex, more particularly at the left side, were the membranes, so that difficulty was experienced in removing the brain. There was excess of fluid in the ventricles, and some general congestion of the surface of the hemispheres. Besides, nothing abnormal was to be noted.

The medulla, upper portion of the spinal cord, and pons were placed aside for microscopic examination, which Dr. R. J. Harvey has kindly undertaken to make, and I trust, at a future date, to lay the result before you.

Remarks.—Any of you who have for yourselves witnessed the striking clinical phenomena of rabies, or who have attended closely to the foregoing description, can have no difficulty in dealing with the question of diagnosis; and yet in many of the books of reference you will notice how much pains are taken to make a diagnosis from other diseases which are supposed to be like rabies—tetanus, hysteria, and acute spinal meningitis. With none of these was there any likelihood of making a mistake. There were, however, symptoms at the time of admission which, taken with the well-known character of the patient and the history of his intemperate habits, suggested strongly the idea of *delirium tremens*, and for a short time rendered a diagnosis not very easy. This idea was, however, rapidly dispelled by the observation of the terror induced on his attempting to drink.

As to the *prognosis* of rabies, I fear it is absolutely unfavourable. Prof. Bollinger (the writer on "Hydrophobia" in *Cyclopaedia of the Practice of Medicine*, H. von Ziemssen) says:—"Although I by no means wish to deny the possibility of recovery from hydrophobia, I cannot but regard it as a significant fact that not a single case of recovery has been reported by any of the recent able observers."

The disease has ended fatally in every instance in which man has been attacked. There are doubtless alleged cases of recovery, and one not unfrequently sees notices of such in the daily journals, but in all these cases the patients were probably the victims, under the influence of fear, of a mental disorder simulating rabies, to which is given the term lyssaphobia, or mental hydrophobia.

Such being the prognosis, the question of *treatment* at the time of the stage of excitement resolves itself into that of palliative medicines. Of these chloroform, morphia, and chloral hydrate are the chief. The first has

been most strongly advocated, but the difficulty of its application in at all a violent patient restricts its employment to mild cases. In a case—that of a boy, aged eleven—in which I have seen it used, it certainly was of benefit in prolonging the narcosis of morphia, and assuaging the spasms, as long as its influence was maintained, but it did not prolong life. The most convenient and serviceable remedies are chloral and morphia, which may be administered separately or together, and hypodermically when the patient cannot swallow—a method, in the case of chloral, well worthy of further trial. Curare, a deadly poison, and a powerful paralyser, has been employed hypodermically with seemingly good results in some few instances, but in our case there was no time such danger of suffocation from spasms to justify its use, although doubtless, had the patient refused all nutriment, I should have employed it; I had it at hand ready for use, should the indications have arisen. As the drug is uncertain in its strength, and the tolerance of it unequal, it is best to begin by small doses— $\frac{1}{16}$ th to $\frac{1}{10}$ th grain—and to repeat them at short intervals, till it manifests its influence by checking the spasms.

If to the foregoing sedatives we add the *hot air* bath, we shall have enumerated all the means at our disposal to soothe and render the last few hours of the sufferer's life less agonising to himself and distressing to his family and friends.

To cure our patients in this, as in all other diseases, is our duty and our aim; but as the verdict in hydrophobia has been, so is it still, and so, until pathology and physiology can throw some new light on this obscure nervous disease, it will, I fear, continue to be, to the end of time, that *'Ιατρός ιᾶται θάνατος'*—"the physician that cures is death."

THE TOPICAL USE OF ERGOTINE.

DR. ELDREDGE, of Yokohama, after an operation for stricture of the bulbous urethra, found, by means of the endoscope, a granular condition of the urethral mucous membrane for about two inches. A gleety discharge was also present. Ergotine (Bonjean's) was applied by means of an ointment syringe, and the patient kept recumbent for an hour afterwards. After six applications on alternate days the gleet had entirely disappeared, and there was no trace of granulations to be discovered. The author has also used ergotine in other cases with advantage. Also Dr. Vidal (*Lyon Médical*) has cured a prolapse of the rectum of more than eight years' standing, by employing injections of ergotine. He has also treated an old-standing case in a woman, and almost completely reduced the prolapse by three injections. The contractions provoked by the ergotine extend as far as the bladder, producing spasm of the neck and dysuria.—*Calcutta Medical News.* S. W.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks ending Saturday, May 22, 1880.

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOtic DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin,	314,666	713	868	31	11	50	5	38	37	5	35·9
Belfast,	182,082	617	421	1	8	1	2	16	11	12	30·1
Cork,	91,965	221	241	—	2	14	—	2	11	7	34·1
Limerick,	44,209	103	85	—	—	—	—	—	3	3	25·0
Derry,	30,884	74	59	—	—	—	—	8	1	—	24·8
Waterford,	30,626	83	62	—	—	5	—	2	—	1	26·4
Galway,	19,692	44	38	—	—	—	—	—	3	1	25·1
Sligo,	17,285	43	26	—	—	—	—	—	1	2	19·6

Remarks.

Notwithstanding the generally favourable character of the season—fine, dry, and sunshiny—the mortality continues high in most of the Irish towns, but particularly so in Dublin and Belfast. The average annual death-rate represented by the deaths registered during the four weeks in sixteen principal town districts of Ireland was 31·4 per 1,000 of the population. In twenty large English towns, inclusive of London (in which it was as low as 19·6), the mortality was at the rate of 21·0 per 1,000 annually. It was 24·9 in Glasgow, 21·5 in Edinburgh, 34·8 in the Dublin registration district, even when the deaths (26) of persons admitted into public institutions from without the district are deducted, and 37·6 within the municipal boundary of Dublin. Zymotic affections were again very destructive to life in Dublin. They were credited with 198 deaths, compared with a ten-year average of 141·2. Smallpox, scarlatina, and whooping-cough showed increased fatality. Measles was much less fatal, and fever remained about the same as in the previous four weeks. Of the 37 deaths attributed to "fever," 12 were returned as due to typhus, 21 to enteric, and 2 to "simple continued fever."

There was not much change in the respective prevalence of the ordinary zymotics in the other Irish towns. In Dublin, diseases of the organs of respiration were assigned as the cause of death in 187 instances, compared with 128·0 in the corresponding period of the preceding ten years, and with 151 in the previous four weeks. They included 97 deaths from bronchitis (average=91·9) and 81 from pneumonia (average=21·6). The latter disease has been extremely prevalent during the past few weeks, owing to a dry atmosphere and unusually great variations of temperature. At the close of the period the respective numbers of cases of the different epidemic diseases under treatment in the principal Dublin hospitals were—of smallpox 88, measles 11, scarlatina 57, typhus 32, enteric fever 28, and pneumonia 20.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of May, 1880.

Mean Height of Barometer,	-	-	-	30·135 inches.
Maximal Height of Barometer (on 29th at 9 a.m.),	-	-	30·480	"
Minimal Height of Barometer (on 23rd at 11 p.m.),	-	-	29·616	"
Mean Dry-bulb Temperature,	-	-	-	52·0°
Mean Wet-bulb Temperature,	-	-	-	47·8°
Mean Dew-point Temperature,	-	-	-	43·5°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	·285	inch.
Mean Humidity,	-	-	-	73·4 per cent.
Highest Temperature in Shade (on 19th),	-	-	-	69·4°
Lowest Temperature in Shade (on 3rd),	-	-	-	38·2°
Lowest Temperature on Grass (Radiation) (on 7th),	-	-	-	33·8°
Mean Amount of Cloud,	-	-	-	52·3 per cent.
Rainfall (on 9 days),	-	-	-	·847 inch.
General Directions of Wind,	-	-	-	E.N.E. & W.N.W.

Remarks.

A fine, very dry month, with frequent sunshine and a preponderance of polar winds. Up to the 26th rain fell in appreciable quantity in Dublin on only three days. The last few days of the month, however, were very showery. During the first fortnight the wind blew almost without intermission from points between N. and E., and the weather was extremely dry with particularly sharp nights. On the morning of the 3rd the sheltered thermometer fell to 38·2° in Dublin, and on the night of the 6th a minimum of 32° was registered at Portarlington. Temperature rose decidedly on the 18th, and on the following day the maximum of the month in Dublin (69·4°) was reached. On the 26th a wave of unusual heat for the time of year passed over France and the S. and S.E. of England. In the afternoon of the previous day the

thermometer had risen to 95° in the shade at Biarritz, and on the 26th the following maxima were recorded—91° at Biarritz and Rochefort, 87° at Brussels, 86° in London, 85° at Lyons, and 82° at Cambridge. At night a thunderstorm passed across the S.E. and E. of England, while rain fell in torrents at many stations situated in a line running north-eastwards from the Bristol Channel to Yorkshire. The weather now became showery in most districts, so that vegetation made rapid progress. The dry harsh weather caused a nearly complete failure of the hawthorn blossom. In Dublin the barometer remained above 30 inches from the morning of the 4th to the morning of the 22nd. In the period between the 22nd and the 25th some deep atmospherical depressions crossed Scandinavia from S.W. to N.E., causing strong westerly winds over the N.W. of Europe. In Dublin hail fell heavily at 1 p.m. of the 27th, and distant thunder was heard at 10 45 a.m. of the 31st. Solar halos were observed on the 5th, 14th, 18th, and 22nd. At 9 p.m. of the 20th the relative humidity was only 52 per cent.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

EXTERNAL RECTOTOMY AS A SUBSTITUTE FOR LUMBAR COLOTOMY IN THE TREATMENT OF STRICTURE OF THE RECTUM.

DR. CHARLES B. KELSEY contributes a suggestive paper to the *N. Y. Med. Journal* of March, 1880, under the above title. He tabulates several cases he has collected in which internal rectotomy or external rectotomy with the knife or with the ecraseur or galvano-cautery has been performed. Omitting the internal operation he furnishes a table of twenty-seven cases of the external operation—eight for malignant and nineteen for non-malignant disease. Nothing less is claimed for this operation than that it is a substitute for lumbar colotomy in all those grave cases of stricture for which that operation is now done, and which are near enough to the anus to allow of the performance of the former without implicating the peritoneum. The cases quoted are not very numerous, but as far as they go colotomy can show nothing better either in the way of relieving pain or prolonging life; and if the results of the minor operation are anything like as good as those of the other, its many advantages do not need to be enumerated. One point which is exceedingly well brought out in the study of these cases is the important part played by the sphincter muscle in the sufferings accompanying stricture, and the relief given by its simple division without interference with the stricture itself. The relief of pain is perhaps as often an indication for

colotomy as is threatened obstruction, and should it be proved by results that this indication may be met by the complete division of the sphincter, the field of the major operation is again narrowed. The question at once arises—How many patients have submitted to all the dangers and discomforts of an artificial anus in the loin or abdomen, not so much for obstruction as for a sphincter muscle constantly in a state of irritation, which might have been relieved by its simple and complete division? A useful bibliographical reference to the literature of the subject is appended to Dr. Kelsey's paper.

TREATMENT OF ULCERATING HÆMORRHOIDS BY CONSTIPATION.

M. DESPRÈS at the Hôpital Cochin has for some months past adopted successfully a paradoxical treatment of ulcerated internal hæmorrhoids. Believing that the main cause which keeps open their surface is the passage of matter during defaecation, he considers perfect rest essential to the cure. To this end he advocates the inducing of constipation—a treatment to be persevered in for about a month and a half, the time necessary for the cicatrix to form. Some cases are unsuitable, as where in hæmorrhoids of long standing the mucous membrane of the lower part of the rectum has become the seat of a chronic catarrhal inflammation with abnormal development of the glands and constant muco-purulent secretion. When the tumours are pediculated it is necessary first to cut them off so as to make them sessile; their raw surfaces will then be practically ulcers, and therefore amenable to the same treatment. Constipation is induced and maintained thus:—The bowels are first emptied by a mild purgative, then the patient takes each day in the evening two pills containing one grain of opium, also every morning an enema containing rhatany and laudanum (6 drops), and every evening a second enema of water with a drachm of alum dissolved in it. For six days this plan is adopted, but as the patient about this time experiences the need of going to stool, he gets a glass of seidlitz water and an enema of oil. Defaecation then causes no pain nor irritation of the healing surface. The constipation is then recommenced for six days more, and continued till the cure is complete.—*Revue Médicale.*

S. W.

THE REACTION OF SWEAT.

SINCE the researches of Thénard, Andral, Favre, &c., the sweat has always been considered to have normally an acid reaction. Trumpy and Luchsinger maintain that it is alkaline, and that its supposed acidity was only due to the sebaceous secretion of the skin. M. Tourton, experimenting on parts of the skin devoid of sebaceous glands—such as the palm of the hand and the corresponding surface of the fingers—shows that the secretion is distinctly acid. Furthermore, he has demonstrated

that in profuse perspiration induced by external heat, or by hot drinks, the acidity of the sweat diminishes gradually, but never disappears. On the other hand, sweat produced by the action of jaborandi is alkaline at those points where it is most profuse, neutral or feebly acid in others.—*Lyon Medical*, Feb. 29, 1880.

K. F.

PILLS OF CITRATE OF QUININE AND IRON.

DR. JAMES M'CRAITH, of Smyrna, in a communication to *The Chemist and Druggist*, says he has invented a means by which tolerably good pills can be made of this very useful medicine, so difficult to be swallowed in any other form. Reduce into fine powder in a mortar the citrate of quinine and iron. Make a very thick paste (a jelly, in fact) of powdered tragacanth, *without sugar*—simple tragacanth powder, in fact. Rub this jelly up with some olei amygdal. dulc., about 4 or 5 drops to the 3*j.* The powdered citrate mixed up with this and any bitter extract—nucis vom. alcool., for example—will make an excellent pill mass. The pills must not be kept in magnesia. Some arrowroot powdered fine and mixed with pulv. glycyrrhizæ is a good powder to drop them in. The pills must be well covered with this powder.

ERRATA.

In note at end of Dr. M'Munn's paper in the June number, page 517, for "Jaffé" read "Maly."

In the report of the discussion on Mr. Stokes's paper on "Vaccinia Gangrenosa," at the Medical Society of the College of Physicians on Wednesday, May 5, 1880, published in this Journal for June, a sentence in Dr. C. F. Moore's remarks on page 532, line 15 from top of page, should read as follows:—"In England, in 1878, there were 9,000 practitioners supplied with lymph from the Vaccine Department, London, each of whom vaccinated large numbers of persons therewith, and not one complaint was made of any serious illness arising from the use of the lymph," &c.

In the report of Dr. Kinkead's reply in the Proceedings of the Dublin Obstetrical Society for May 1, 1880, published in this Journal for June, page 546, we are requested to make the following corrections:—

Line 12 from top of page—for : "I excluded cases of very narrow pelvis," read—"I included only cases of very narrow pelvis."

In *line 16 from foot of page* the authorship of a paper in *The Medical Press* is attributed to Dr. Harris. What Dr. Kinkead did say was—"That impression was altered after I read papers by Dr. Harris, in *The American Journal of Medical Science*; and I was further impressed with the necessity of reconsidering the subject after reading a paper in *The Medical Press*," &c.

Line 3 from foot of page, after "mortality" read "in ovariotomy."

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PART I.
ORIGINAL COMMUNICATIONS.

ART. III.—*Report upon a Series of Forty-seven Cataract Operations.** By JOHN B. STORY, M.B., Dub.; F.R.C.S.I.; Surgeon to St. Mark's Ophthalmic Hospital; Examiner in Ophthalmic Surgery in the University of Dublin; &c.

In bringing forward this subject I have been influenced by the belief that it is hardly possible to overestimate the value of accurate statistics of the results of operations and methods of treatment; and that, while the literature of British and Irish ophthalmic surgery is in many respects worthy of comparison with that of any other country in the world, it has been singularly deficient in such statistical reports. So far as the subject-matter of this report is concerned, there is hardly any mention of such a thing as the average chance of success in an operation for cataract in the English ophthalmological treatises, and a surgeon who wishes for information on the subject is driven to consult Continental literature. As a proof of the deficiencies, I may remark that in the last number of Nagel's *Jahresbericht* there is a table of the results of cataract operations in 50 ophthalmic hospitals—29 German and 21 in Europe and America—and not a single British institution is included in this list. In the hope that this reproach will soon be taken away from our ophthalmological literature, I have taken this report as the subject of my thesis.

* A thesis for the Degree of Master in Surgery in the University of Dublin.

The only portion of the report that can be of any value, from a statistical point of view, is the first portion of it—relating to uncomplicated senile cataract; and I have only included the other cases in order that, by publishing all those, without exception, in which I have operated on the lens, it might be thoroughly understood what I mean by an uncomplicated case. This report includes all the operations I have performed on the lens up to September 24th, 1879.

The operations divide themselves naturally into the following groups:—

- I. Extraction of uncomplicated senile (so-called) cataracts.
- II. Extraction of complicated cataracts.
- III. Solution and suction operations for soft cataracts.
- IV. Operations for traumatic cataracts.

It is needless to dwell on the advantages of this classification. What an operator wishes to ascertain from the record of his cases is whether by his methods he has reached as high a percentage of successes as has been attained by others in similar cases, and for this purpose it is almost impossible to make use of any cases except those of uncomplicated senile cataract, as, once complications are admitted into the statistics, all comparative value depends upon the character of the complications, and the statistics are worthless for the comparison of methods. For a similar reason traumatic cases form a group by themselves, and the great difference in the method of treating soft cataracts justifies their appearance in a separate table.

The method of operating in all cases, where the reverse is not distinctly stated, was as follows:—Anæsthetics were never given; the patient lay on a couch facing the window, and the surgeon, standing or sitting behind the patient's head held the knife (von Græfe's), right-handed for the right eye, and left-handed for the left eye. The difficulty of using von Græfe's knife with the left hand seems to have been greatly overrated by some surgeons. A stop speculum was always used; the plan of holding the lids open by means of assistant's fingers, which has been adopted in some foreign cliniques, does not seem to have anything to recommend it—not even novelty. The assistant's fingers were used instead to restrain the action of the extra palpebral portion of the orbicularis. The globe being fixed by a toothed forceps, the incision was made upwards. An iridectomy was never omitted. Until an operator has satisfied himself that his results with iridectomy are as good as

it is possible to produce by that method, it is wiser not to experiment in operating without iridectomy. In performing the iridectomy the fixation forceps, when necessary, was given over to the assistant to hold, this plan being manifestly better than allowing the assistant to use the scissors, as is sometimes done, and often recommended. Wecker's or Dowell's scissors were used in nearly all the cases to cut the iris. The capsule was opened by Weber's method, when not otherwise stated, and the speculum was removed either immediately before or immediately after the cystotomy. It was never kept in during the delivery of the lens. Before dividing the capsule all clots and blood were removed from the anterior chamber, and the edges of the iris reposited. The nucleus was delivered by pressure of a large curved curette on the cornea, through the under-lid. In no case was the cornea itself touched by a curette. If this manœuvre failed, Bowman's spoon or Taylor's vectis was used to extract the cataract. The débris was removed by gentle rubbing with the lower lid, unless where it is stated that a curette or spoon was inserted for the purpose. The pupil being cleared, and the wound edges cleaned, the eye was closed, a piece of fine cambric and cotton wool carefully applied over the lids, and firmly tied down by Liebreich's bandage. In some of the later cases simple absorbent cotton wool was used directly over the lids, without the interposition of any cambric. It is to be understood that neither atropine nor eserine nor any other medicaments were used, unless the fact of their use is mentioned. As a rule the bandage was not changed for twenty-four hours, and the eye rarely examined or opened for forty-eight hours after the operation.

The treatment of complications is given when necessary.

In classifying results success is said to be perfect when the eye, with a suitable convex glass had a power of $V = \frac{6}{50}$ Snellen. Any power of V. below $\frac{6}{50}$ is counted as an imperfect success, but though imperfect the result may be considered fair if the patient can accurately count fingers at one metre's distance in front of the eye ($V = \frac{1}{50}$ approximately). If the perception of light is good and the patient can count fingers at all, the operation, though a failure, cannot be classed as a complete one, for these cases generally admit of improvement by secondary operations, and at all events the patient has some power of guiding himself about by his eye-sight when he can count fingers at all. These cases are included among the partial successes as very poor results, some of them being again susceptible of improvement by secondary operation.

The cases where no secondary operation is likely to do good, and where vision was only equal to perception of light and darkness, are classed as absolute failures.

I. UNCOMPLICATED CATARACTS.

Of these there were 25 cases, in all of which the cataract was mature or nearly so, the reaction of the pupil to light good, the projection perfect, the tension of the globe normal or nearly so, and no evidence of intraocular disease. The numbers in brackets refer to the registry of St. Mark's Hospital, or the page of my notebook, and the abbreviations used are:—R. = right eye; L. = left eye; r. p. = reaction of pupil to light; P. = projection; T. = tension of globe estimated by fingers; M. = male; F. = female; the numbers after the sex refer to the age of the patient; V. = power of vision; pl. = bare perception of light and darkness; Jg. = Jaeger's test type.

CASE I.—(165, July, 1877). M. 60, single; a large flabby-looking individual. The urine was examined and found healthy. R. and L. senile cataract. R. Modified linear operation of v. Græfe. The incision was much too small in consequence of the fixation forceps tearing through the conjunctiva, and the subsequent difficulty in fixing the eye. The delivery was difficult; some perfectly fluid vitreous was lost before the nucleus was extracted, the spoon was used three times, and owing to a further escape of vitreous some cortex was left in. Two days later chemosis, and gradual implication of all the ocular coats in a panophthalmitis which ran its course without much pain, produced effusion of blood into the anterior chamber, and resulted in a collapsed globe. V. = 0. The unfortunate result in this case is to be attributed partly to the diseased state of the eye, the vitreous humour being perfectly fluid, but chiefly to the small size of the incision, which rendered the extraction so difficult that there was no chance of keeping the posterior capsule intact. In such cases it would be well to enlarge the wound at all hazards, and if the condition of the vitreous could be suspected beforehand it would be advisable to make the lower section.

CASE II.—(519, March, 1878). F. 58, married. Palpebral fissure small; probably had granular conjunctivitis at one time of her life. R. Mod. lin. v. Græfe; the forceps tore through the conjunctiva, and counter-puncture was placed rather too far into the sclerotic, but a good conjunctival flap was made; the nucleus was large, and the cortex was not completely removed; healing normal, except some conjunctivitis. Result, V. = fingers at 6 metres; does not know her letters.

CASE III.—(524, March, 1878). M. 46, married. Hard but barely mature cataract. L. Jaeger's Hohlschnitt upwards; the knife was not perfectly sharp, and the incision consequently difficult to complete. Owing to position of wound in the operation the iridectomy was unsatisfactory, and the delivery of the lens very difficult, its edge catching against the upper portion of the cornea and lying in a sort of *cul-de-sac*. For the same reason it was not possible to remove all the cortex, and some little vitreous escaped. The edges of the iris healed into the corneal cicatrix, and the capsule had afterwards to be divided with a needle. Result, $+ \frac{1}{3\frac{1}{2}} V. = \frac{6}{18}$.

CASE IV.—(49, May, 1878; 53, February, 1879). F. 67, widow. L. Mod. lin. v. Gräfe upwards; operation normal; nucleus large; a piece of capsule snipped off with scissors after the extraction; healing normal. Result, $+ 14 D V. = \frac{6}{18}$; + 15 D reads Snellen 1·75 at 7"; + 18 D Wecker 0·25 at 25 cm.

CASE V.—(56, May, 1878). F. 39, married. After the operation, was discovered to be six months pregnant. R. Cataract not perfectly ripe; mod. lin. v. Gräfe upwards; operation normal, except that a long time had to be spent in removing the cortex; healing slow, with subacute iridochorioiditis. The evening of the day of operation the patient had a long hysterical fit of crying, which was the starting-point of the iridochorioiditis. Result, V. = fingers at 1·25 m.

CASE VI.—(67, June, 1878). F., unmarried. Whether R. or L. not recorded; mod. lin. v. Gräfe upwards; incision rather small, and spoon used in delivery, which was not at all easy; the nucleus was large, and no vitreous was lost; healing normal. Result, $+ \frac{1}{6} V. =$ fingers at 7 metres.

CASE VII.—(72, June, 1878). F. 50. L. Mod. lin. v. Gräfe upwards; operation normal, except that the spoon was used; healing normal. Result, $+ \frac{1}{3} V. = \frac{8}{9} ? ?$

CASE VIII.—(83, June, 1878). M. 70, married. R. Mod. lin. v. Gräfe; operation normal, except that the fixation forceps tore through the conjunctiva, and that some fluid vitreous escaped after delivery of lens; healing slow, with subacute iridochorioiditis. Result fair. Patient, who was a small farmer, wrote fifteen months afterwards to say he could "ramble" about his farm with the operated eye, the second one being "blind entirely."

CASE IX.—(98, June, 1878). F. 60. L. Two years “bad”; ripe senile cataract. R. Has synechia posterior and senile cataract. L. Mod. lin. v. Græfe; incision small; delivery difficult, the spoon being used four times, and the nucleus being large. Result (15 months later), + V. = fingers at 3 m. T. n. Considerable opacity in pupillary area from capsule, pigment, and lymph.

CASE X.—(151, July, 1878). M. 60. R. Mod. lin. v. Græfe; incision corneal only and small; cortex very sticky; no vitreous lost. Result, + $\frac{1}{3}''$ V. = $\frac{6}{18}$.

CASE XI.—(152, July, 1878). M. 40. R. Three years “coming on”; mod. lin. v. Græfe; incision hardly large enough; counter-puncture rather far in the sclerotic; a good deal of haemorrhage. Result (10 months later), + $\frac{1}{3}''$ V. = $\frac{6}{18}$; T. - ?

CASE XII.—(154, July, 1878). F. 66; a broken-down woman. R. Unripe cataract. V. = fingers at 0·5 m. L. Ripe cataract; mod. lin. v. Græfe; incision small; spoon used; nucleus large; some cortex left in; no vitreous lost; healing slow; some iritis. A secondary needle operation was performed, leaving result V. = fingers inaccurately. Another needle operation will be of use.

CASE XIII.—(291, August, 1878). M. 60, coachman. Patient looks much older than he is. R. Mod. lin. v. Græfe; very considerable haemorrhage; no vitreous was lost, although it showed in the wound after the delivery of lens; healing very slow. On the seventh day there was still a clot in the anterior chamber, and the wound was not closed. A month later an attack of iridocyclitis with T. + 1; iridectomy was performed without permanent benefit; the false membrane was torn across with two hooks (Noyes). Fifteen months after operation V. = fingers at 2·5 m.; a false membrane in pupil, and the iris discoloured and dragged into cicatrix of incision.

CASE XIV.—(61, May, 1879). M. 40 (same patient as Case XI). L. 3-mm. flap upwards with eserine; the incision not very large, and a small conjunctival flap; operation normal; healing normal. Result, + $\frac{1}{3}''$ V. = $\frac{6}{18}$.

CASE XV.—(107, June, 1879.) F. 65. L. Mature senile cataract; T. n. R. Mature senile cataract; T. n. L. 3-mm. flap upwards, with eserine; incision small—the flap in reality not being more than 2 mm.

in height; vectis was used; some iritis occurred in process of healing.

Result, + $\frac{1}{3\frac{1}{2}}$ " V.= $\frac{3}{36}$.

CASE XVI.—(107, June, 1879.) F. 65 (same as Case XV.). R. Mature senile cataract. 3-mm. flap upwards, with eserine, under Lister's carbolic spray; operation normal; some iritis in healing. Result, + $\frac{1}{4}$ " V.= $\frac{6}{24}$; T.—1. Synechia posterior.

CASE XVII.—(111, June, 1879.) M. 57. Deeply sunken eyes, with very prominent eyebrows. R. Mature senile cataract; T.—1. 3-mm. flap, without eserine and without Lister's spray; a small conjunctival flap, and considerable haemorrhage. The capsule was subsequently divided with a needle. Result, + $\frac{1}{4}$ " V.= $\frac{6}{18}$.

CASE XVIII.—(111, June, 1879.) M. 57 (same as Case XVII.). L. Senile cataract, not perfectly ripe; T.—? 3-mm. flap, with eserine and Lister's spray. Result, + $\frac{1}{4}$ " V.= $\frac{6}{12}$.

CASE XIX.—(115, July, 1879.) M. 64 (same as Case X.). L. Mature senile cataract; T. n. 3-mm. flap, with eserine; large conjunctival flap, but trifling haemorrhage. Result, + $\frac{1}{3}$ " V.= $\frac{6}{60}$.

CASE XX.—(128, July, 1879.) M. 47 (same patient as Case III.). R. Senile cataract; T.—? 3-mm. flap, with eserine; a little cortex was left in; wound healed in forty-eight hours, but there was some iritis. Result, + $\frac{1}{4}$ " V.= $\frac{6}{18}$.

CASE XXI.—(147, July, 1879.) M. 70. R. Mature senile cataract, the capsule of which has a calcareous look; T. n. 3-mm. flap, with eserine and Lister spray. The nucleus large; some cortex left in; slight iritis. Result, + $\frac{1}{3\frac{1}{2}}$ " V.= $\frac{6}{36}$.

CASE XXII.—(165, August, 1879.) F. 35 (?). R. Mature cataract, rather overripe, with cholesterine crystals in lens; T. n. 3-mm. flap, with eserine and Lister's spray; peripheral section of capsule, after Knapp. Result, + $\frac{1}{9}$ " V.= $\frac{6}{18}$.

CASE XXIII.—(165, August, 1879.) F. 35 (?) (same patient as Case XXII.). L. Mature cataract; no signs of cholesterine; T. n. 3-mm. flap, without eserine and without spray; peripheral section of capsule; wound did not heal for nine days; no inflammatory reaction. Result, + $\frac{1}{9}''$ V.= fingers at 1·5 m.

CASE XXIV.—(219, September, 1879.) F. 50; a nervous, weak-looking old woman. R. Mature senile cataract; T.+? 3-mm. flap; incision much too small—not so much as a 2-mm. flap in reality; peripheral section of capsule; delivery very difficult; cornea maltreated; no spoon, however, was used, or vitreous lost. Result, whole upper third of cornea sloughed, leaving a depressed cicatrix; globe phthisical (?); V.= pl.

CASE XXV.—(229, September, 1879.) M. 40; sight failing two years. R. Mature cataract of a milky colour; cortex probably fluid; T. n. 3-mm. flap; peripheral section of capsule, after which milky cortex came away; nucleus large, smooth, and slippery; cortex fluid; delivery easy. Sulphate of atropia ointment (grs. 4 to oz. vaseline) was kept continually on the eyelids from the third to the eighth day, when the pupil was fully dilated. The iris healed into corners of wound, and the pupil was drawn slightly upwards. Fundus normal; slight irregular astigmatism from capsule; T.—?. + $\frac{1}{3\frac{1}{2}}''$ V.= $\frac{6}{18}$. Patient cannot read, and knows very little English.

Of these 25 cases the result was:—

V. > 0·50 < 1·00 in 1 case (No. 18).

V. > 0·33 < 0·50 in 9 cases (Nos. 3, 4, 7, 10, 11, 14, 17, 20, 22).

V. > 0·10 < 0·33 in 6 cases (Nos. 2, 6, 16, 19, 21, 25).

Complete successes=16 cases=64 per cent.

V. useful, but < 0·10 in 7 cases, 5 of these being good results (Nos. 5, 8, 9, 15, 23), and 2 of them poor (Nos. 12 and 13).

Partial successes: Good results, 5 = 20 per cent.

Poor results, 2 = 8 per cent.

Failures: 2 (No. 1, V.=0; No. 24, V.=pl.)=8 per cent.

In comparing the different methods of operating, there were 12 cases of v. Græfe's modified linear extraction, 12 cases of the 3-mm. peripheral flap extraction, and 1 case of Jaeger's Hohlschnitt.

Mod. lin. v. Graefe (Nos. 1, 2, and 4 to 13), of which:—

Complete success in 6 (Nos. 2, 4, 6, 7, 10, 11).

Good success in 3 (Nos. 5, 8, 9).

Poor result in 2 (Nos. 12, 13).

Complete failure in 1 (No. 1).

Jaeger's Hohlschnitt—1 case (No. 3), a complete success.

3-mm. flap—12 cases (Nos. 14 to 25):—

Complete success in 9 cases (Nos. 14, 16, 17, 18, 19, 20, 21,
22, 25).

Good success in 2 cases (Nos. 15, 23).

Complete failure in 1 case (No. 24).

Though the result of Jaeger's Hohlschnitt was satisfactory in the one case, in which that method of operating was adopted, I did not attempt any further operations by that method, as it does not seem to offer any practical advantages over the other methods, while there are several very serious drawbacks connected with it—viz., the impossibility of observing accurately the whereabouts of the point of the knife when it has once pierced the cornea, the difficulty in removing a large enough portion of iris to avoid synechia anterior, and the awkwardness of getting the lens out of the *cul-de-sac*, formed by the upper margin of the cornea.

In comparing results, it is manifest that the 3-mm. peripheral flap has been far more successful in my hands than the modified linear extraction. For this there are many reasons.

It is much easier to measure exactly beforehand the size of the incision, and still more easy to alter and exactly carry out your intentions after the point of the knife has entered the anterior chamber. The wound is recorded as small in one-half the mod. lin. cases, and only one-sixth the peripheral flap. The result of this is seen in the greater frequency with which the spoon was used in mod. lin. than in peripheral flap extractions— $\frac{5}{6}$ mod. lin.; $\frac{1}{3}$ peripheral flap.

The position of the wound renders the escape of vitreous less likely. Vitreous was lost in two-twelfths, or 16·6 per cent., of mod. lin. extractions, but not once in the 12 peripheral flap extractions.

The peripheral flap takes the cicatrix away from the dangerous region of the ciliary body.

To these reasons must be added that, as I have only lately taken to the periph. flap operation, the experience gained in performing

v. Græfe's operation has been of use in improving the technique of the former.

In eight flap operations, Nos. 14, 15, 16, 18, 19, 20, 21, 22, the sulphate of eserine was used at the time of the operation, to draw the cut edges of the iris away from the corners of the incision in the outer tunic of the globe, as recommended by Dr. Wecker. I am not able from this experience to form a conclusion as to the advantages and disadvantages of its use, but this much may be observed, that iritis occurred in four out of the eight cases in which eserine was used, while it is only mentioned as being present in six out of the seventeen cases in which eserine was not used. Against this, however, may be put the fact, that all the cases where eserine was used resulted in perfect successes, except one, which was very fair. V. = $\frac{3}{36}$.

In four of the cases, Nos. 16, 18, 21, 22 (peripheral flap), the operation was performed under Lister's carbolic spray, but no attempt was made to disinfect the conjunctival sac by any other applications of carbolic acid or anything else. Some operators have recommended the instillation of a $2\frac{1}{2}$ per cent. solution of carbolic acid into the conjunctival sac previous to operating, but I think anyone who tries its effect on his own conjunctiva will be very slow in irritating his patient's eyes with so powerful an agent. The carbolic spray has not, in my experience, produced any ill results whatsoever, and it cannot but be a good thing to even partially asepticise the unhealthy Dublin atmosphere before exposing the inner portion of so delicate an organ as the eye to its influence.

Of the four operations all were completely successful.

In four operations, Nos. 22, 23, 24, 25, Knapp's peripheral section of the capsule was adopted, instead of Weber's rectangular flap. One of these (No. 24) was lost, owing to causes quite unconnected with the cystotomy, one (No. 23) gave only an imperfect success, and two (Nos. 22, 25) were complete successes. It is impossible to come to any conclusion upon this evidence; the pros and cons in reference to this modification appear about equally balanced. It is likely that there is less danger of iritis after extraction by Knapp's plan, but there is certainly greater probability of a secondary operation being necessary, and secondary operations are not always trifling. No secondary operation has as yet been necessary in these four cases.

The fact of there being a definite conjunctival flap formed is recorded in four cases (Nos. 2, 14, 17, 19), one Græfian, and three flaps. All were complete successes. Of course it is probable that many more cases than these had well-formed conjunctival flaps, but the fact is mentioned in these cases only.

The vitreous was lost in three cases = 12 per cent., a very high percentage for uncomplicated cataracts (Nos. 1, 3, 8). One was Jaeger's operation, and the other two were Græfian. The vitreous was not once lost in the peripheral flap operation. Of these three cases one was lost, one was an imperfect, and one was a complete success.

The spoon was used in six cases (Nos. 1, 6, 7, 9, 12, 15), being five Græfian, and one flap. Of these cases one was a failure, three were imperfect successes, and two perfect successes. This, however, exemplifies not so much the danger of using a spoon, but the necessity for forming a large incision to let out the cataract easily without injury to the tissues, for the spoon was never used when the cataract came out easily without it.

Secondary operations were necessary or advisable in four cases, one of Jaeger's, one of the peripheral flaps, and two of Græfe's.

Some cortex was left in the eye in six cases (Nos. 1, 2, 3, 12, 20, 21), three Græfian, two peripheral flap, and one Jaeger's. One of these was lost, one was a partial, and four complete successes.

In three of the cases there was considerable haemorrhage (Nos. 11, 13, 17), two of which were complete successes, and one partial.

The wound was small in eight cases (Nos. 1, 6, 9, 10, 11, 12, 15, 24) = 50 per cent. of the Græfian extractions, and only 16·6 per cent. of flaps.

Only three of these cases were completely successful, three partially successful, and two completely lost, exhibiting forcibly the supreme importance of an easy exit for the lens. There were 64 per cent. complete successes upon the whole of the series, while only 37·5 per cent. were completely successful where the incision was small.

The iris or cornea was subjected to much pressure in one case (No. 24), and the eye was lost directly in consequence of the injury to the cornea. It is probable that these tissues were subjected to considerable maltreatment in other cases, but the fact is not recorded.

The fixation forceps tore through the conjunctiva in three cases (Nos. 1, 2, 8)—one completely successful, one partially successful, one lost.

The Untoward Results.—Panophthalmitis in one case (No. 1), due to diseased condition of eye, coupled with imperfect performance of the operation, the vitreous being lost, and portions of cortical matter being left in.

Iridocyclitis or iridochoroiditis in three cases (Nos. 5, 8, 13), due in one case (No. 5) to the unripeness of the cataract, coupled with an hysterical fit of crying on the evening of operation; in the second (No. 8) to the loss of vitreous, which was perfectly fluid; and in the third (No. 13) to the prolapse of vitreous, and the great haemorrhage that occurred at the operation.

Simple iritis in five cases (Nos. 12, 15, 16, 20, 21), probably caused by the spoon in one case (No. 15); by cortex left in in two cases (Nos. 20, 21); by use of spoon in addition to incomplete extraction of cortex in one case (No. 12); and in one case (No. 16) no cause can be assigned, unless it be asserted that the use of eserine was the cause.

The iris is recorded as healed into the wound in two cases; it probably took place in a greater number, but was not noticed. One of these was Jaeger's Hohlschnitt, and the other was a peripheral flap.

A secondary operation was advisable in four cases—one Jaeger's, two Gräfe's, one peripheral flap. It was not necessary in any of Knapp's.

II. EXTRACTION OF COMPLICATED CATARACTS.

CASE XXVI.—(88, June, 1878.) M. 66. L. V.=pl.; P. uncertain, and only in inner segment of field; T. n.; annular synechia posterior; hydrops of posterior chamber; probably detached retina. Operation, modified linear v. Gräfe; vitreous was fluid, and came out; spoon used; some cortex left in; healing not recorded. Result, "A very slight improvement," which for present purposes may be counted a complete failure, as nothing is stated about the chances of a secondary operation.

CASE XXVII.—(292, December, 1879.) M. 74. L. Partial synechia posterior; senile cataract; V.=fingers at 1 m. R. Collapsed since infancy; V.=0; mod. lin. v. Gräfe; wound too small, and iridectomy too small also; delivery with spoon, and very difficult; some vitreous lost; healing not recorded. Result not tested, but patient was able to write letters again, which he had not been able to do for years. A fair case of incomplete success.

The two cases require no comment; both were unfavourable cases to operate on, but the second was much less so than the first,

and the result was consequently more satisfactory, and would probably have been much more so had the primary incision been larger.

CASE XXVIII.—*Complicated Cataract treated by Discission.*—(280, January, 1879.) M. 30. L. Cataracta arida siliquata; r. p. good; T. n.; V. = pl.; probable chorioiditis. Operation, an attempt to divide toughened capsule with a needle, followed by an attack of cyclitis, with a regularly eczematous inflammation of the skin of the lids and face. Result, V. = fingers at 2 m. reads Jg. 20.

III. OPERATIONS ON THE SOFT CATARACT OF EARLY LIFE.

CASE XXIX.—(324, Sept., 1877.) M. 9. R. Needle operation twice.

CASE XXX.—Same patient as Case XXIX. L. Needle operation thrice. Result in both, great improvement. The boy was to return in a month or two for glasses, but never has appeared since.

CASE XXXI.—(32, May, 1879.) M. 23; sailor. Unilateral cataract, for which no cause whatsoever could be assigned. Two needle operations. Result, + 13 D. V. = $\frac{5}{6}$ + 18 D. reads Jg. 1 at 8".

CASE XXXII.—(192, August, 1878.) F. 3. R. Two needle operations. Result, good.

CASE XXXIII.—Same as Case XXXII. L. Three needle operations. Result, good.

CASE XXXIV.—(105, June, 1879.) F. 2; sister of last patient. This child's father, paternal uncle, and paternal grandfather had all congenital cataracts; nothing ascertainable from history of family as to cause; child never had convulsions. R. Pupil acted badly to light, atropine, and duboisine. Needle operation, followed by a violent attack of cyclitis, with high tension, necessitating the removal of the swollen lens through a linear incision, two days after the operation; after this the globe slowly collapsed.

CASE XXXV.—Same patient as No. XXXIV. L., like R., acted badly to light and mydriatics. Needle operation at same time, used to a greater extent than in R. Result, lens was absorbing slowly, but very satisfactorily, when the patient's mother removed her from hospital. This child had a severe attack of spasms and delirium from one instillation of a solution of duboisine (grs. 4 to oz.) into the two eyes after the operation.

Of these seven operations the result may be put down as satisfactory in four cases (Nos. 29, 30, 32, 33), and likely to turn out satisfactorily in a fifth case (No. 35). A perfect success may be recorded for one case (No 31), and one (No. 34) was a complete failure.

It was impossible in this series of cases to give a more exact record of the results, owing to the youth and general lack of intelligence of the patients, but the facts, as noted, are not very encouraging—a total loss of 14·28 per cent. is far too high a figure.

I am quite at a loss to account for the severity of the inflammatory attack in No. 34. The operation was done at the same time, and under the same conditions, in this eye as in the other eye (No. 35), except that the lens substance was not broken up by the needle nearly so much in the eye that went to the bad as in the other one. Whether a preliminary iridectomy would have warded off the attack, or whether it would have been better not to perform the linear extraction, I am not able to determine.

IV. TRAUMATIC CATARACTS.

CASE XXXVI.—(480, February, 1878.) M. 15. L. Blow from a thorn bush fourteen days previous to operation. Dilated, immovable pupil; chemosis, T. + 2. Operation, linear extraction, with eserine; healing. About a fortnight after operation the tension became so high that I relieved it by a sclerotomy. Result, T. + ? V. = fingers at 1 m.

CASE XXXVII.—(134, April, 1879.) M. 9. L. Blow from a thorn bush two months previously. Operation, keratonyxis twice, with ten days' interval; fourteen days later attempted linear extraction, with eserine, followed by two more needle operations in the ensuing month. Result, V. = $\frac{6}{9}$.

CASE XXXVIII.—(284, January, 1879.) M. 18. R. Injury from thorn three months ago. T. + ? V. = fingers at 0·5 m. Operation, keratonyxis, followed by linear extraction a fortnight later, the tension being T. + 1. Vitreous bulged through the linear wound. Result, $+ \frac{1}{3}''$ V. = $\frac{6}{12}$.

CASE XXXIX.—(287, February, 1879.) M. 35. L. Blow of a stone one month previously. V. = pl. T. — 2. Globe tender on pressure; synechia posterior totalis (?) ; iris discoloured; leucoma cornæ; globe angular. Operation, mod. lin. v. Græfe, in hopes of finding the piece of stone in the cataracticous lens. Result, phthisis bulbi.

XL.—(69, April, 1879.) F. 20. R. States she received a blow from a cow's tail some months previously. The history seems rather doubtful, but she is very positive in attributing the blindness to the blow of the tail. There are two specks of lymph on the anterior lens capsule, and the reaction of the pupil to atropine is not good. L. Has a slight nebula on the cornea. Operation—R. Keratonyxis; two days later, removal of swollen lens through linear wound with suction curette. Result, panophthalmitis and subsequent enucleation. I cannot account for the unfortunate result in this case. The patient was a fine, strong, stout country-girl.

CASE XLI.—(93, June, 1875.) M. 55. L. Traumatic cataract; leucoma cornea et synechia anterior. Operation, 3-mm. peripheral flaps upwards; wound small; spoon used three times for cortex, but nucleus removed without spoon; some vitreous escaped, and some cortex had to be left behind. Result fair.

CASE XLII.—(117, July, 1879.) M. 39. L. Blow of a rope, sixteen years ago, followed by violent pain. V. = fingers at 3 m. Dislocated opaque lens; iridodonesis. Not at all a favourable case for operation, but patient so determined upon it that I consented to do it. Operation, 3-mm. peripheral flap; vitreous escaped before iridectomy; lens delivered by vectis. Five days later violent pain and chemosis, which yielded to the artificial leech and hypodermic injections of morphia. Result, + $\frac{1}{18}$ " V. = fingers at 3 m.

CASE XLIII.—(130, July, 1879.) F. 28. L. Perforating wound of cornea and lens from prod of a scissors, twenty-four hours before admission to hospital. The case was treated for ten days with iced compresses, and atropine. Operation, extraction through suction, under Lister's spray, duboisine being used as mydriatic. Result, + $\frac{1}{3\frac{1}{2}}$ V. = $\frac{6}{60}$.

CASE XLIV.—(169, August, 1879.) M. 38. L. Blow from a piece of wood six days previous to admission to hospital. Cataract, synechia posterior; T.—? V. = pl. Treated by iced compresses and mydriatics for six weeks. Operation, removal through suction curette, and division of capsule with needle, eleven days later. Result, + 11 D. V. = $\frac{5}{7.5}$? ? ?

CASE XLV.—(174, August, 1879) M. 28. R. Two years ago got a blow from a stone, and for two months afterwards suffered violent pain. The stone evidently wounded the cornea, iris, and lens, and has resulted

in a thick capsular opacity, the lens being absorbed. There is also synechia anterior. T. n.; V. = fingers at 0·5 m. Operation, division of capsule with needle, which failed, owing to the tough nature of the membrane. Patient left hospital in the same state as he entered.

CASE XLVI.—(180, August, 1879.) M. 149. L. Wound from a piece of steel, two days previously, which is not now in either the lens or vitreous. Chemosis, pain, and some lymph in anterior chamber. Operation was undertaken in the hope of finding the foreign body in the lens, and averting panophthalmitis. 3-mm. flap, iridectomy, and removal of soft lens and some lymph with suction curette. Result, failure to find piece of steel; panophthalmitis, phthisis bulbi, and eventual enucleation.

CASE XLVII.—(Notes lost. July, 1879.) M. Traumatic cataract, with partial synechia posterior. Removal of lens through linear wound, combined with iridectomy. Result unknown; patient was doing well when he left the institution, and he never returned.

The methods used were in the 12 cases modified linear of v. Graefe, 1 (No. 39); 3-mm. flap, 3 (Nos. 41, 42, 46); linear extraction with iridectomy, 1 (No. 47); linear extraction with eserine, 3 (Nos. 36, 37, 38). In No. 37 the needle was used twice previous to the linear extraction; linear extraction with suction curette, 3 (Nos. 40, 43, 44); simple needle operation, 1 (No. 45).

The results of the different methods adopted cannot be fairly compared, as the cases differed so extremely in the severity of the injuries.

In the 12 cases the result stands—Success, complete, 4 (Nos. 37, 38, 43, 44); partial, 3 (Nos. 36, 41, 42); curable by secondary operation, 1 (No. 45); unknown, 1 (No. 47); failures, 3 (Nos. 39, 46, 40).

This gives complete success, 33·33 per cent.; partial success, 25·00 per cent.—total successes, 58·33 per cent.; curable or unknown, 16·66 per cent.; losses, 25·00 per cent.

It must be recollect that two of the three cases which terminated unsuccessfully were almost perfectly hopeless from the start, No. 39 being one in which the globe was practically phthisical, and where the operation was only undertaken as a substitute for enucleation in the hope of removing a foreign body, and No. 46 being already in a condition of plastic, if not suppurative, inflammation when the operation was attempted.

To sum up the results of all the cases taken together there were—

Complete success,	-	-	-	21	cases.
Partial success,	-	-	-	16	"
Improvably or unknown,	-	-	-	3	"
Complete failure,	-	-	-	7	"
			Total,	-	47

To compare these results with those obtained elsewhere by skilled operators, I have annexed the following tables:—Table No. I. gives all my own operative results, complete success being assumed when the power of vision was $\frac{1}{15}$, which corresponds approximately to the power of counting fingers at three yards distance, and total loss when $V = 0$, or merely the power of distinguishing light and darkness. Most of the other operators have adopted this standard, though not all of them by any means. It is much to be regretted that there is no agreement among oculists on this subject. The standard here assumed certainly is much too low, but this cannot be helped, as it is that adopted by most of the surgeons whose statistics are given.

The other tables give the results of in all 11,012 operations. Column *a* gives the name of the operator, and the reference to Nagel's *Jahresbericht*; column *b* the number of operations; *c* the number of complete successes; *d* the number of partial successes; *e* the number of failures; and *f* the percentage of failures.

TABLE I.

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
<i>Uncomplicated Cataracts:</i>					
Modified linear of v. Graefe	-	12	7	4	8·3
Jaeger's Hohlschnitt	-	1	1	—	—
3 mm. peripheral flap	-	12	10	1	8·3
Total	-	25	18	5	8·0
<i>Complicated Cataracts</i>					
Traumatic Cataracts	-	8	—	2	—
Soft Cataracts	-	12	5	4	3
Total	-	7	1	5	1
<i>Total</i>					
	-	47	24	16	7
					14·88

TABLE II.—*Results of Operations on Uncomplicated Cataracts by the Modified Linear Method of v. Graefe.*

<i>a</i>		<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. Secondi,	N. 1871	-	94	84	4	6
2. Horner, ^a	N. 1872	-	371	329	22	20
3. Rothmund, ^b	N. 1873	-	99	78	18	3
4. Pagenstecher,	N. 1873	-	55	50	3	2
5. Bäuerlein	-	-	29	22	5	2
6. Woynow	-	-	34	23	8	3
7. Cohn	-	-	14	10	3	1
8. N. 1874 ^c —Results of 22 surgeons		838	704	67	67	80
9. Macconachie,	N. 1874	-	48	45	3	—
10. Knapp,	N. 1875	-	46	42	2	2
11. N. 1875 ^d —Results of 25 surgeons		889	791	36	62	70
12. Derby, &c.,	N. 1875	-	53	45	—	8
13. N. 1876—Results of 50 surgeons		1,711	1,376	219	117	70
14. Knapp,	N. 1876	-	36	30	2	4
15. Story	-	-	12	7	4	1
		4,329	3,636	396	298	6·88

Complete success, 83·98 per cent.; partial, 9·14 per cent.; losses, 6·88 per cent.

TABLE III.—*Results of the Modified Linear Extraction in Complicated and Uncomplicated Cases.*

<i>a</i>		<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. De Wecker,	N. 1870	-	109	104	!	5
2. Martin (Hyades),	N. 1870	-	55	50	3	2
3. Secondi,	N. 1871	-	120	103	7	10
4. Derby,	N. 1871	-	60	44	18	3
5. Snellen (Westhoff),	N. 1871	-	209	190	14	5
6. Keller,	N. 1871	-	20	18	2	—
7. Wilson, Henry	-	-	100	80	15	5
8. N. 1872—Results of 11 surgeons		667	618	24	25	—
9. Joy Jeffries, &c.,	N. 1872	-	46	35	9	2
10. Calderini,	N. 1873	-	10	9	—	1
11. Barde,	N. 1873	-	43	32	8	3
12. Little,	N. 1873	-	260	178	6	16
13. Jacob,	N. 1873	-	7	4	2	1
14. Just,	N. 1874	-	75	66	6	3
15. Knapp,	N. 1875	-	25	16	3	6
16. Jeffries,	N. 1875	-	16	16	—	—
17. Adler,	N. 1876	-	58	57	—	1
18. Pagenstecher,	N. 1876	-	76	67	6	3
19. Arit. (Gr. & Sennisch)	-	1,075	900	114	61	5·67
Uncomplicated cases of Table II.		2,971	2,587	232	152	5·11
		4,329	3,636	396	298	—
		7,300	6,223	628	450	6·16

^a Horner's results are given in percentage—88·8, 5·8, 5·4.^b Rothmund exacts V.=0·1 for complete success.^c Nagel gives the result in percentage. He counts V. > $\frac{1}{10}$ complete success. 84·0, 8·0, 8·0.^d Nagel gives only percentages—89·0, 4·0, 7·0.^e The error in the figures is copied from Nagel's table in the Jahresbericht for 1876.

TABLE IV.—*Results of Extractions by various Methods on both Complicated and Uncomplicated Cataracts.*

	<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
1. Macnamara, ^a	N. 71	-	124	97	12	15
2. N. 1871—Results of 9 surgeons		538	470	37	31	—
3. Steffan,	N. 1872	-	23	21	1	1
4. Driver, ^b	N. 1872	-	50	44	3	3
5. N. 1872—Results of 7 surgeons		589	546	9	34	—
6. Steffan,	N. 1873	-	22	21	1	—
7. Jacob, ^c	N. 1873	-	8	4	2	—
8. ” ^d	”	-	56	43	6	7
9. Hansen, ^e	N. 1873	-	46	41	4	1
10. Steffan, ^f	N. 1874	-	23	22	1	—
11. Agnew,	N. 1874	-	33	27	2	4
12. H. Derby,	N. 1874	-	64	44	18	2
13. Jaeger (Klein),	N. 1874	-	102	78	9	15
14. Maier,	N. 1875	-	83	67	10	6
15. Cohn, ^g	N. 1875	-	18	15	3	—
16. Wecker,	N. 1875	-	100	97	—	3
17. Chiralt,	N. 1875	-	85	73	7	5
18. Degauneau,	N. 1875	-	114	88	17	9
19. Schieß-geninsca, ^h	N. 1876	-	65	53	6	6
20. Cervera, ⁱ	N. 1876	-	156	113	—	43
21. Rothmund,	N. 1876	-	2	2	—	—
22. Carreras,	N. 1876	-	18	12	3	3
23. Schirmer,	N. 1876	-	11	9	1	1
24. Maier,	N. 1876	-	3	3	—	—
25. Braun,	N. 1876	-	1	1	—	—
26. Rothmund,	N. 1876	-	1	—	—	1
27. Reymond, ^j	N. 1876	-	3	2	1	—
28. ” ^k	”	-	42	23	8	11
29. N. 1876—Results of 7 surgeons		36	25	2	9	—
30. N. 1876—Results of 3 surgeons		57	45	9	3	—
31. N. 1876—Results of 3 surgeons		5	2	1	2	—
32. Wecker, ^m	N. 1876	-	101	95	—	6
33. N. 1876—Results of 8 surgeons		34	30	1	3	—
34. Higrena, ⁿ	N. 1876	-	50	37	10	3
35. Arit. (Gr. & Scamisch) ^o		954	753	126	75	—
36. ” ^p	”	-	95	73	16	6
Cases in Tables II. and III.		8,712 7,300	8,076 6,223	326 628	810 450	8.35 —
		11,012	9,299	954	760	6.90

Altogether in 11,012 extractions complete success has been obtained in 84.44 per cent. of the cases, partial success in 8.66 per cent., and 6.9 per cent. have been completely lost.

- ^a By Macnamara's method.
- ^b By Weber's method.
- ^c By spoon operation.
- ^d By flap operation.
- ^e By Liebreich's method.
- ^f By Pagenstecher's method.
- ^g By Wecker's method.
- ^h By Wecker's method. Eight cases are omitted, being still under treatment.
- ⁱ By Jaeger's method.
- ^j By flap operation.
- ^k Chiefly by flap operation.
- ^l By Lebrun's method.

- ^l By Liebreich's method.
- ^m By Pagenstecher's method.
- ⁿ By Wecker's method.
- ^o By Jaeger's method.
- ^p By Weber's method.

The conclusions to be drawn from these statistics are—firstly, that the number of failures taken on the whole is much less than one would have expected. In 4,329 uncomplicated cases, the failures were 6·88 per cent., while in 11,012 cases of all kinds the failures were only 6·9 per cent.; secondly, as it is highly improbable that too high a figure has been given for the failures in any of the tables, we may conclude that an operator must expect to lose 7 out of every 100 of his cases.

It might at first sight seem that we should also conclude that 7 per cent. even of the uncomplicated cases will result in failure. I myself have hitherto lost 8 per cent. of such cases; but I believe that at least five-sixths of the failures in these cases are due to preventable causes. If I had to repeat the operations in my cases which have turned out badly, I believe, with my present experience, the results would be successful, and I cannot but think that many other operators would feel the same thing about their unsuccessful cases.

The more carefully we study all the various conditions which influence the success of our operations, the more exactly we map out the primary incision so as to give the freest possible exit to the lens, without exercising undue pressure on the ocular tissues on the one hand, or leaving too large a wound to undergo the process of repair on the other hand; and the more closely we attend to the perfect cleanliness of all the instruments and bandages, if we do not actually adopt some form of antisepticism, the sooner shall we reduce the present 7 per cent. of losses to nil.

I am aware that some operators, notably Horner of Zurich, and Wecker of Paris, have already reached a far higher percentage of success than what the tables given above exhibit, and this gives us additional grounds for hoping that what they have accomplished can also be attained by others, if the latter can bring to the work equal skill and equal care.

ART. IV.—*Vascular Hydrosis as a Prophylactic to Poisonous Absorption.* By LESLIE MATURIN, L.K.Q.C.P.; L.R.C.S.I.; late Surgeon to the Red Cross Society in the Russo-Turkish War, 1877–78.

ABSORPTION, we are aware, is effected through the medium of the veins, lymphatics, and lacteals, and the materials absorbed through these channels, entering the circulation, are carried in its current to every part of the body. Collaterally with absorption and deposi-

tion, the human frame is incessantly undergoing destruction, the effete materials being removed from the system by means of the bowels, kidneys, and skin. In youth, deposition being in excess of destruction, there is growth; in adult age both processes are evenly balanced; in old age, waste exceeding repair, decay, and subsequently death, ensue. In starvation the body is self-absorbent, hence emaciation. As a consequence of fever, rapid disintegration and absorption of the tissues takes place, and excretion not being effected in the same ratio, increase of temperature and other consequences are the result. Experiments have illustrated, and experience confirmed, the theory that absorption takes place much more rapidly after the body has sustained a loss of blood. Witness the increased susceptibility to puerperal septicæmia when preceded by uterine haemorrhage. Irrespective of the quality, there is a want of a certain quantity of fluid to enable the ventricles to perform their rhythmical contractions. In such cases increased absorption takes place to supply the deficiency, and by means of it the poisonous materials are conveyed into the circulation, with their too-often fatal consequences.

It is by this last-mentioned fact that I am led to the consideration that if it be true (as undoubtedly it is), why should not the converse theory obtain also—viz., that in repletion of the circulation absorption should take place in an inverse ratio? Fill a bladder with water, and a charged syringe introduced into an opening can inject no more fluid into it—in other words, is it possible to induce rapidly such a condition of fulness of the circulation as to render it temporarily incapable of receiving anything through the channels of absorption? In cholera, where the aqueous portion of the blood is diminished by excessive purging—in haemorrhages, where the blood is deficient in quantity, do we not raise it to its requisite standard of bulk, at least, by the injection of fluids, frequently with beneficial, and never (when the operation is properly performed) with any evil, results. I believe this practice could be usefully and speedily applied in many cases where, despite the use of antidotes, cauterisation, hypodermic injections, diaphoretics and purgatives, patients succumb to the poisonous absorption of snake and dog bite, dissecting wounds, and vegetable and mineral poisons taken internally.

The object to be attained is to localise the poison by rendering the blood-vessels temporarily incapable of receiving the products of absorption, affording time in the interim for local treatment.

Let us review the present treatment of poisoned wounds in general. The affected part is recommended to be isolated by means of a ligature, washed, sucked or cupped, excised or destroyed by caustics, and sweating or perhaps purging are then induced to evacuate whatever of the poison *may* have been absorbed. We must suppose from the latter treatment that absorption has *already* taken place; if not, they seem to me the most certain method of favouring it. In poisons taken internally, antidotes, emetics, and purgatives are employed, and perhaps subsequently diaphoresis; but, *unless the poison is already circulating in the blood*, diaphoretics and purgatives in the first instance, and diaphoretics in the second, are misemployed, tending as they do to facilitate absorption. In both instances, unless local treatment has been very promptly and effectually employed (which is rarely the case), and even contemporaneously with their employment, absorption has been and is going on, and then when, often too late, we shut the door when the steed is stolen, we evacuate the poison by the same channel, *or by the opposite one* to that by which it has entered—in fact, absorption is presupposed and treated accordingly. To employ purgatives, diuretics, or diaphoretics in cases of poisoned wounds, is to favour the absorption of the poison, as we procure that of effusions and other matters by the same means. To establish diaphoresis in cases of poisons taken internally, is likewise to hasten the absorption of the poisonous matter contained in the digestive tract. Were local treatment infallible, these subsequent measures would be superfluous, and doubtless were the poisons *at the time* circulating, and were we satisfied that the delayed local measures had immediately destroyed or neutralised the remaining poison, this treatment would be rational. But would not preventive measures in such cases be preferable to curative? Ought not our object be rather to prevent absorption than to absorb first, and eliminate afterwards.

The method of treatment which I propose is to inject into the veins in any of the ordinary situations distilled water at a temperature of 98° Fahr., by means of the apparatus for transfusion of blood, or, if that be not available, an ordinary syringe may be used. Let an animal be curarised, and, as soon as possible afterwards, let water be injected into the veins, cold astringent fluids being injected into the stomach as a counter-absorbent and to prevent purging, and as arterial tension becomes diminished by diaphoresis, let water be again injected into the veins. By this method absorp-

tion is certainly retarded, perhaps prevented, and by diaphoresis the poison is washed out, as it were, by the same channel by which it entered. To prevent internal absorption, let a non-corrosive and not over-active poison be administered to an animal by the mouth, the injection of water proceeded with as before, and, for the purpose of illustration, let no antidotes, purgatives, or emetics be employed. Should the theory be applicable, these latter measures, as also those of washing, cupping, cauterisation, &c., in the previous experiment, are only matters of secondary consideration, but I need hardly add that they should be sedulously employed as adjuncts when treating the human subject.

This proposition will naturally suggest the query—Would not its employment be liable to establish unpleasant after-consequences, such as hydræmia, dropsical effusions, rupture of blood-vessels, haemorrhages, &c.? But would such really result? Are these the usual sequelæ of the rapid ingestion of large quantities of fluids into the stomach? Are they not rapidly absorbed and as rapidly gotten rid of by the usual modes of excretion? The British workman has been known to consume, between the receipt of his wages and the closure of the public-houses the same day, as much as two, or even two and a half, gallons of beer. The percentage of water in this fluid, though, no doubt, variable, is necessarily very large, but are his dropsical effusions, occurring, as we are aware, too often, attributable to the bulk of the fluid consumed, or to the organic changes induced by other matters in that fluid? Should such take place, however (occurring, as they would, independently of organic disease), would they not be far more easily combated than the effects of those poisons in resistance of which they may be established.

ON WHAT DAY SHOULD THE VACCINIFERS BE CHARGED?

DR. CRÉQUY calls the attention of practitioners to the question of the time at which points should be charged with vaccine matter. While he believes that for a first vaccination matter taken on the eighth day—the usual period—is sufficiently powerful, since it has a virgin soil, so to speak, to grow in, he thinks that for re-vaccinations the lymph should be taken on the seventh day. In a long series of re-vaccinations he has found that, with points charged on the eighth day, just half his cases showed specific results, while two-thirds were successful when seven-day lymph was employed.—*Revue Médicale.*

S. W.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

On the Bile, Jaundice, and Biliary Diseases. By J. WICKHAM LEGG, Fellow of the Royal College of Physicians, London, &c. London: H. K. Lewis. 1880. 8vo. Pp. 719.

THIS book opens with an account of the chemistry of the bile, commencing with the bile-salts, and giving methods for their preparation. The author prefers the following method to that of Hoppe-Seyler. It is a modification of that of Kühne:—"The bile of six or eight ox-bladders is brought together in a large Berlin dish, and rubbed up into a black mass, with an excess of animal charcoal. This black mass is then put into a wide-mouthed bottle, shaken up with ordinary spirit, and allowed to stand for several days. The spirit is then filtered off from the black powder, and the filtrate evaporated to dryness. The dry residue is then dissolved in absolute alcohol, and poured into a great excess of ether in a large stoppered bottle." After some days crystals are deposited. The same method will be found recommended in Foster and Langley's "Elementary Practical Physiology," with slight modifications.

In discussing Pettenkofer's test the methods of Neukomm, Bogomoloff, and Strassburg are described, also the spectrum of the reaction. It is a noticeable fact that there are as many discrepancies in the accounts of this spectrum as there are fallacies in the test itself, as each observer describes a different spectrum. The reason of this probably is that the bile of different animals was used by these observers, in their experiments, as we ourselves have found that ox-bile salts give a different spectrum to that got from the bile-salts of man, or of the pig, when Pettenkofer's test is applied to them. Moreover, in some cases the bile was probably not completely decolorised before applying the test.

Chapter II. treats of the bile-pigments, and we are told that the colouring matters of bile do not seem to give any absorption bands in the spectrum, and that it is only when "oxydising agents" are added to them that these bands make their appearance. Further,

that "Maly noted that a solution of bilirubin in chloroform removed the blue and violet out of the spectrum up to 70," whatever that number may mean. We may say at once that this statement is too general, for although fresh human, dog, or cat bile gives no absorption bands, yet the bile of some of the lower animals gives a most characteristic series of bands. Besides, the general absorption of all of the spectrum, except the red, is as characteristic of human bile as the two bands between D and E are of haemoglobin—a fact to which Dr. Quinlan has lately called attention in his important paper read before the Royal Irish Academy.* As to the appearance of a band at C, which Dr. Dalton has noticed, it is now known that it appears only in bile which is beginning to decompose. The methods of Städeler and Thudichum for the preparation of bilirubin, then an account of Jaffe's urobilin, and of the relation of the bile-pigments to that of blood, are also given in this chapter.

The author thinks that the tendency of modern physiological chemistry is not to show that bilirubin is derived from haemoglobin, but the reverse, and he apparently bases his arguments on the discrepancies in the statements of various observers as to the identity of bilirubin and haematoidin. We were of opinion that the opposite was the case, and that physiologists had already accepted the view that bile-pigment is derived from haemoglobin. Whether haematoidin is or is not identical with bilirubin, we know that a pigment occurs in the urine which Hoppe-Seyler prepared artificially from haematin by the action of tin and hydrochloric acid, and that Maly prepared an identical pigment from bilirubin by the action of sodium amalgam. If Dr. Wickham Legg accepts these facts he cannot avoid the conclusion which they teach. Before rejecting the statements of such men as Hoppe-Seyler and Kühne, we should remember that two or three kinds of pigment may exist which resemble each other so closely that they cannot be distinguished by the eye alone; that, inasmuch as they are all derived from blood, they may be called haematoidin, but that the haematoidin examined by Preyer may not have been the same as that examined by Hoppe-Seyler. When a pigment is found which owes its origin to blood, and which gives all the reactions of bilirubin, we may surely accept the conclusion that bilirubin can be formed from

* The Application of Spectrum Analysis to the Estimation of Bile in the Renal Secretion of Patients suffering from Jaundice. Proceed. Roy. Irish Acad. 2nd Ser. Vol. III.

haemoglobin; and the fact that urobilin can be formed from either lends, as we said before, additional weight to this view.

Biliverdin, bilifuscin, biliprasin, bilihumin, and other pigments, are also described, but the authorities quoted in some instances are not recent enough to satisfy the student of physiological chemistry. In Chapter III. the fats, salts, gases, and other constituents of the bile are described; in Chapter IV. its physical and chemical appearances. In the following chapter the history of the physiology and the sources of the bile in the economy, its amount in health, and the agents which affect it, are discussed. Under the last head we have the effect of food, both as regard quality and quantity, drink, the influence of an increase or decrease of the blood-pressure in the liver, of the contractions of muscles, of sections of various nerves, of irritation of the spinal cord, of ligature of various vessels, of irritation of the digestive canal, &c. The office of the bile is next treated of. We are told in p. 145 that "Bidder and Schmidt, with other observers, noted the disgusting smell of the faeces and flatus of dogs in whom the bile had been diverted from the intestines," and that the same thing is said to be "*seen*" in jaundice.

The interesting experiments of Schiff on the biliary circulation are detailed in pp. 150 and 151, by means of which he showed that there is a circulation of the bile as well as of the blood, and that the bile poured into the intestine is again taken up by the mesenteric vessels, carried to the liver, and again excreted into the duodenum. An account is here also given of the experiments of Laffter, Prince Tarchanoff, Socoloff, and Tappeiner.

The author believes that the office of the bile "is to pass into the intestine, there to undergo changes itself, the products of decomposition being absorbed into the blood, and leaving the body by the urine." We should prefer to insert the words "some of" before "the products," as the above statement is too general.

In Chapter VIII. the action of drugs on the secretion of bile is described; and here the valuable researches of Rutherford and Vignal are given, with the result which is already known to the profession through reports of these gentlemen published in 1875.

The physiological action of the bile acids is then discussed—*e.g.*, their influence on the red blood-corpuscles, on white blood-corpuscles, on the gases of the blood, on the liver-cells, on the glands, on striped muscle, and on the heart. The experiments by which the author showed that the bile acids have no influence upon the ends

of the *vagus* in the heart, or upon the muscular tissue, are also fully described. His conclusions led him, "*per viam exclusionis*," to believe that the bile acids act on the cardiac ganglia, and, therefore, that the slow pulse of jaundice is thus accounted for. The more recent experiments of J. Steiner are also mentioned, from which he concluded that the bile acids act upon only one of the ganglia of the heart—that in the sinus, and not on the atrio-ventricular ganglia. The influence of the bile-salts on the blood-pressure, the respiration, the nervous system, the serous membranes, the temperature, and on the urine, is also noticed.

Dr. Wickham Legg comes to the conclusion that cholesterin is a harmless body, the injection of which into the veins is followed by no evil result. He, therefore, controverts the hypothesis of Dr. Austin Flint, who called attention in 1862 to the physiological action of cholesterin, and to the state which he supposed to be due to its retention in the blood, and which he called "cholesteरæmia."

In Chapter X. the etymology, history, and etiology of jaundice are treated of. Respecting hæmatogenous jaundice the author writes:—"The grounds on which the theory of hæmatogenous jaundice have been set up are, to my mind, altogether insufficient. It cannot be said that the origin of the colouring matter of the bile from that of the blood is proved; indeed of late the course of discovery has been rather against its identity than in favour of it. And until it has been shown that bile-pigment has its source in the blood-corpuscles, it will be the duty of the practical physician to reject the theory of hæmatogenous jaundice."

We have already discussed the question as to whether bilirubin or other biliary colouring matter can be formed from hæmoglobin, and as such appears to be the case we see no reason for rejecting the conclusions of Frerichs, Kühne, Herrmann, and others; so that, although we may not agree with the term hæmatogenous in the sense in which the word is generally used, we consider that all bile-pigment is hæmatogenous, in so far as it is derived from hæmoglobin. But until the exact cause of such cases has been made out we think that the adoption of the term is, to say the least, premature.

The class of cases which may be included under "suppression" is also discussed, and the conclusions of the author are negative. Then follows jaundice from absorption, under which are included—(1) jaundice from obstruction of the ducts, (2) that due to absorption of the bile when the pressure in the blood-vessels of the liver is

decreased, and (3) that due to incomplete destruction of the bile absorbed into the blood. We must, however, pass over this part of the subject, as there is nothing new put forward which would interest our readers.

In describing Gmelin's test for bile-pigment the author recommends the urine to be poured on to the surface of the nitric acid in a test tube by means of a pipette, taking care that the fluids do not mix. A modification of Brücke's method is also recommended: concentrated sulphuric acid is added to nitric acid cautiously, when the sulphuric acid falls to the bottom. This prevents the too rapid development of the colours, and they also appear one above the other. Respecting Maréchal's test, as described by Dr. Walter G. Smith in this Journal (1876, Vol. LXII., p. 449)—viz., a green coloration when a few drops of tincture of iodine are added to the urine, the author says that the iodine fails at the beginning and end of an attack when the nitric acid gives a distinct green. We, on the other hand, have found that the iodine test is by far the more reliable. But in all cases the spectroscope should be used, as the peculiar absorptive power of bile-pigment for the violet end of the spectrum is very characteristic, and the spectrum of Gmelin's reaction is not less so and is easily observed.

The detection of bile acids in the urine by various methods is also described, but as they may be present in healthy urine we need not here go further into the subject. We may state, however, that Dr. Legg asserts that "the bile acids must be separated out from the jaundiced urine before their presence can be definitely asserted."

The presence of albumen and tube-casts in jaundiced urine is referred to. It may be remembered that Nothnagel and more recently Finlayson have called attention to the presence of the latter, which are generally—according to these observers—unaccompanied by albumen. The author, however, has failed to find them.

The various complications of jaundice are fully described—*e.g.*, wasting, itching of the skin, and slow pulse; and to account for the last Dr. Legg rejects Traube's theory, and adopts the view that it is due to the action of the bile acids on the cardiac ganglia (*v. supra*). The occurrence of cardiac murmurs, xanthopsia, haemorrhages, and xanthelasma, is also fully treated of. Respecting the treatment of simple jaundice by emetics, as recommended by the late Sir D. Corrigan, the author gives a word of warning, for "if the ducts be obstructed by a gall-stone, or the head of the pancreas enlarged,

vomiting seems more likely to be followed by a rupture of the bile passages behind the stone than by any good to the patient."

"*Icterus gravis*," by which the writer means "an acute jaundice, accompanied by nervous symptoms, delirium, coma, and convulsions, and by a haemorrhagic diathesis," is considered by him to be as much a general disease as smallpox or typhoid, and is accompanied by a parenchymatous degeneration of all the glands and muscles. The two most important varieties of this disease are acute yellow atrophy, to which the term "*icterus gravis*" is generally applied, and phosphorus poisoning.

Of the various explanations given as to the cause of the jaundice accompanying acute yellow atrophy which Dr. Legg collects under four heads—viz., (1) suppression of secretion, (2) paralysis of larger ducts, (3) a state of the blood akin to pyæmia, and (4) obstruction high up in the liver ducts, he accepts the last or Buhl's theory. According to this authority the beginnings of the bile-ducts are filled by a fattily degenerated epithelium, and thus a mechanical cause for the jaundice set up; and Cornil's observation, that the interlobular ducts are filled with epithelium not only in cases of *icterus gravis*, but in all cases of parenchymatous degeneration of the liver, lends support to Buhl's view. The jaundice of phosphorus poisoning, that produced by arsenic, antimony, and other bodies, of snake-bites, of various fevers, *icterus gravidarum*, *embryonum*, *neonatorum*, *infantum*, and *menstrualis*, is also fully described.

The author strongly objects to the term bilious in its usual acceptation, and advises its discontinuance, but by the adoption of the term "bilious diseases" he has not helped to bring about this result. It seems to us that he is too sceptical in his views about functional derangements of the liver. The growing tendency with many is to deny the existence of any diseases which do not show evident traces in the *post mortem* room. This, although it may please the too materialistic views of the pathological anatomist, is a hindrance to the right comprehension of many of those cases on the border-land of disease with which the general practitioner is brought every day into contact.

Although there is a good deal of tautology noticeable in this volume it could not well be avoided, and the very great amount of bibliographical research and the clear statements of the views of different authorities more than counterbalance any slight defects which it may possess. It is a valuable work of reference and a welcome addition to medical literature.

RECENT WORKS ON PHYSIOLOGY.

1. *Notes on Physiology, for the Use of Students preparing for Examination.* By HENRY ASHBY, M.D. 2nd Edition. London: Longmans, Green, & Co. 1880. Pp. 275.
2. *Manual for the Physiological Laboratory.* By VINCENT HARRIS, M.D., M.R.C.P., and D'ARCY POWER, B.A., Oxon. London: Baillière, Tindall, and Cox. 1880. Pp. 124.

BOTH of these are books for students, although written with different aims. The first belongs to the class of cram-books, by the aid of which students who are too idle or careless to make up their subjects thoroughly are enabled to scrape through their examinations. Such books generally have the advantage, besides their conciseness, of being of a convenient size to be smuggled into the examination hall, and in this way serve still further as an aid to the idle student. In the preface the reader is always told gravely that he must not depend on the cram-book, but must read the classical text-books; but we fancy such advice is seldom taken, and that the readers of the larger works would rather depend on their own notes than on those of another. The work before us seems neither better nor worse than the general run of its class, but such books are, in our opinion, not to be commended, nor is their use by students to be encouraged.

The manual of Dr. Harris and Mr. Power is of a different class, and is intended to assist the student in the most important part of his studies—namely, his practical work in the laboratory. It consists of two parts—the first, dealing with practical histology, occupies 84 pages; the second, with physiological chemistry, 20 pages; and it concludes with a short appendix—partly histological, partly chemical.

Our language, although owning no work of the comprehensiveness of that of Frey, possesses several very excellent books on practical histology—notably that of Dr. Klein, in the "Handbook for the Physiological Laboratory," and those of Mr. Schäfer and Professor Rutherford. With such works the one before us may be compared, since the very small space devoted to physiological chemistry makes it practically a work on histology; but the manual of Professor Foster and Mr. Langley, dealing as it does with histology and chemistry, is one that presents a complete analogy with that under consideration. We ask, then, in the first place,

what is the object of the authors in publishing this work? In what respect does it excel those already in existence? In the preface we find the answer to these questions.

"The excellent manuals of Foster and Langley, Schäfer, and Rutherford possess the objection that they are somewhat too elaborate for the ordinary student, whilst they do not contain any epitome of histology—an omission which, in the opinion of the authors, greatly detracts from their utility."

"This work may, therefore, prove in some respects more useful to the classes of practical physiology now established in the medical schools than those more complete ones which have just been mentioned."

We are not quite clear as to what the authors understand by the too great elaborateness of the existing manuals. If it means that the methods given are too numerous, we do not think the objection a very good one, as the more difficult methods may readily be omitted by the beginners, and we are strongly of opinion that it is a good thing for students to learn a large number of methods, as it is only by the application and extension of these that histology will be advanced. But if the elaborateness complained of means a too minute description of the methods, we differ altogether from the authors, as we think such a fault scarcely possible. The entire success of histological work depends on minute attention to small details, and if a book is to be of any service to a student it must enter fully into these details, and give them in such a way that the directions can be followed by the reader without further assistance. Now we are of opinion that in the present work such minuteness of direction is not to be found, and that, in consequence of its absence, the manual will prove utterly worthless to the student. We shall give some examples (taken at random) in support of this opinion, and shall then notice the epitome of histology, which is supposed to add so much to the value of the book.

Everyone knows how important it is to harden tissues properly, in order that good sections may be made of them. After the enumeration of several hardening reagents, including osmic acid, chloride of gold, and picric acid, we find general directions given, which, however, are applicable only to bichromate of potash hardening—for, if spirit is to be used, the tissue should not be washed with dilute bichromate solution, and pieces of tissue the size of a hazel nut would not harden very satisfactorily in osmic or picric acids or chloride of gold.

In the section on staining it is stated that Beale's carmine solution is that most generally used. This, we think, is not the case; its use is condemned in most of the modern books, and the practical difficulties in its use are very great. Four aniline dyes are enumerated, but no indications given as to how they are to be used, although for, at all events, one of them, purpurin, such directions are much needed. Aniline violet, a more useful dye than any of those given, is not mentioned. The student is given to understand that silver-staining is useful only for endothelium, while the directions for the employment of this most valuable method are far too meagre to be followed by any beginner.

There is no method whose success depends more on minute attention to detail than that of staining by chloride of gold. All that is said about the matter is:—"Chloride of gold is used to stain certain tissues, principally to show the nerves; it is used also for cartilage—a .5 to .25 per cent. should be employed." Turning to cartilage, we find only that cartilage may be hardened (!) by the gold method, and that the sections after such hardening should be stained in carmine or haematoxylin. Under nerve tissue not a word is said about chloride of gold, which is again mentioned only in speaking of embryonal connective tissue (no directions), and of the cornea, where we are told to put the object for an hour into $\frac{1}{2}$ per cent. solution, then into acidulated water, and expose to the light; but no indication is given as to when the object is known to be fit for mounting, or what appearance should show that the gold impregnation has succeeded. Not a word is said of the invaluable methods of reducing the gold by formic or tartaric acid. We think there are very few students who would succeed in gold-staining without further directions than are here given.

In speaking of tendon, it is directed to tease a fresh tendon in glycerine, and fat is ordered to be similarly treated. We think most histologists will agree with us that fresh tissues should never be placed in glycerine. There are no directions given for preparing or mounting sections of dry bone, while the directions for preparing such specimens of teeth are far too imperfect to be followed.

No directions are given for the examination of fresh nerve fibres, or those stained in osmic acid; but the fibres are ordered to be teased from longitudinal sections of nerves hardened in chromic acid or bichromate of potassium.

The elements of smooth muscle, and the muscle of the heart,

are to be isolated after lying for a few weeks in 2 per cent. chromic acid solution—a process by which it would be scarcely possible to get good results. No directions are given for isolation by strong caustic potash solution.

To study the development of the teeth we are told to decapitate “the foetus of a new-born rat.”

In the Appendix a list of staining fluids is given from a paper by Mr. J. W. Groves. After some of these are placed the names of certain histologists. If this means anything we suppose it indicates the introducers of the several dyes. The authorship is, however, wrong in almost every case. Thus, eosine is attributed to Dreschfeld, carmine to Beale, logwood to Golding Bird, and picrocarmine to Schäfer.

We might readily extend our objections to the directions for work—in fact, there is scarcely a single method described sufficiently in detail to be of any real use to a student.

We shall now give a few examples of the epitome of histology which constitutes one of the excellencies of this manual. In speaking of bone, the canaliculi of neighbouring Haversian system and interspaces are said to communicate freely, and the canaliculi are said to contain prolongations of the bone cells. Sharpey's fibres are said to bolt the lamellæ together—the only lamellæ having been mentioned being those of the Haversian systems, in which Sharpey's fibres do not exist. No account is given of the structure of red marrow further than that “it is rich in blood-vessels, and in cells having the character of lymph corpuscles, fat cells,” &c. No notice is taken of the cellular structure of the muscular tissue of the heart. The sheath of Schwann, of the medullated nerve, is said to have “a varied number of oval nuclei attached,” and is supposed to consist of nucleated endothelial cells joined end to end, forming a membrane. This view will hardly agree with the relation of the nuclei to the constrictions of Ranvier. Lantermann's notches in the nerve fibres are not noticed at all. In the spinal cord the posterior vesicular columns are said to be best marked in the lumbar enlargement. The tongue is said to consist of three coats—mucous, submucous, and muscular. The branching of the muscular fibres is not noticed. No description of the papillæ is given. The salivary glands are described as tubular, and the clear mucous cells in the acini of the mucous glands are spoken of as goblet cells. In the description of the liver the interlobular connective tissue and vessels are always called intralobular. The cells in the tubules

of the testicle are said not to be arranged in any definite order, while the only mention of the remarkable intertubular tissue is the vague statement that a number of connective-tissue corpuscles lie in the interstitial connective tissue.

We think these examples will suffice to show that the histology is not much better than the technical part. Our space will not allow of our noticing at length the sections on physiological chemistry. We may say that here, also, insufficiency in details of methods and inaccuracies in description are not wanting.

We regret to have been obliged to speak so unfavourably of this book, and we confess to great disappointment at finding such a work emanating from the justly famous school of St. Bartholomew's Hospital.

Annals of the Anatomical and Surgical Society. Brooklyn, N. Y.
Vol. I., 1878-9, and Vol. II., monthly parts, 1880.

THESE papers are issued by a Society established in 1879 on the basis of a previously existing club, and, if its vitality may be measured by the character of its publications, it may fairly be congratulated on gaining strength with increasing age. Many of the cases commented upon are of interest, but, as might be expected, the several papers are of very unequal merit.

Of the anatomical communications the majority are teratological, and the most interesting of these is the account of the autopsy and sternum of the well-known Groux, which has found a resting place in the Museum of the Society to which it was "donated" by his widow. Two illustrations are given of this classical bone. There is also an illustration of a new instance of a cervical rib, and one of a case of communication of the colon (rectum) and bladder, in which the describer seems to have rather hazy ideas of the vesiculae seminales. A case is recorded of a fatal strangulation of eighteen inches of the ileum in the superior ileo-cæcal retro-peritoneal sac, and several other anatomical specimens are described at length. Professor Dalton also contributes a paper on Cerebral Anatomy, in which he corrects a common error in the description of the corpus striatum, and describes the tail of the nucleus caudatus as continuous into the roof of the middle cornu of the lateral ventricle nearly to its anterior extremity, an extension which the reviewer has been in the habit, for more than fifteen years, of teaching as the normal arrangement, and which is correctly described by Krause, though

overlooked by many other anatomists. Few, however, who have examined this region in many brains, by the method of fine sections, will agree with him in describing the cauda as being continuous with the amygdala, or the latter with the cortical gray matter.

The surgical papers include an account of Bigelow's operation of Litholapaxy, in which the writer denies the justice of Mr. Stokes' claim, on behalf of Sir P. Crampton, for priority, on the ground that in this case the washing-bottle was intended to remove detritus from an atoned, not from a healthy, bladder.

Mr. Howe communicates an article on Transfusion, an operation which, he says, he has frequently performed, and which he regards as very little more complex than the opening of an abscess. He recommends its performance in extreme cases of syphilitic marasmus.

Among other papers we find an account of the operation of excision of Meckel's ganglion for infra-orbital neuralgia, and the record of a case of partial excision of the rectum for malignant disease.

A. M.

Outlines of Medical Treatment. By SAMUEL FENWICK, M.D.,
F.R.C.P.; Physician to the London Hospital. London: J. & A.
Churchill. 1879. Pp. 375.

THE great attention which—thanks mainly to the teaching of the German school—is now given to the accurate diagnosis of a disease and to its pathology, has, apart from our increased knowledge of the action of drugs, done much to remove professional empiricism from the art of therapeutics. But, on the other hand, a consequent tendency in some hospital clinical teaching to neglect systematic and practical instruction in the treatment of disease, is too often the result. With some such idea probably in his mind, Dr. Fenwick has published, under the above title, some most useful lectures on the medical treatment of various diseases. The plan adopted is an admirably simple one. Rules are first laid down for the treatment of disease generally. Upon the belief that similar pathological conditions, although in diverse organs, present similar indications for treatment, indications for the treatment of acute inflammation, for the treatment of haemorrhage, and for treatment during an attack of spasm or neuralgia, are next furnished. And, in a third chapter, indications for the treatment of chronic local diseases, and for the treatment of dropsy, &c., are given. The remainder of the work deals with separate diseases and special

symptoms, the remarks as to their treatment being accompanied by a reference to the pages on which the general therapeutical indications in each case, as previously referred to, are to be found. It must not be thought, however, that Dr. Fenwick has produced a mere enlarged index of diseases and remedies. On the contrary, he has endeavoured—and we think satisfactorily—to expound the objects to be kept in mind in the rational treatment of disease, and the best means, medicinal and otherwise, of obtaining the desired results. Over 200 classified formulæ are appended to the work; and we anticipate it will prove as great a favourite with students and junior practitioners as the author's well-known "Guide to Medical Diagnosis"—to which indeed it is intended as a companion—has long been.

Lectures on Electricity in its relations to Medicine and Surgery. By A. D. ROCKWELL, M.D. 1879.

A PUFF of the methods of general faradisation and central galvanisation advocated by Drs. Beard and Rockwell, and a mere re-hash of fragments of their large treatise on Medical Electricity.

Physiological Therapeutics: a New Theory. By T. W. POOLE, M.D. Toronto. 1879.

WE greatly suspect that the judgment of most of those who read this book may be expressed in the words of the author himself, who, in the concluding paragraph, with a seeming forecast of his fate, says:—"Some will treat our pages with silent contempt; others will characterise them as 'mere theory,' and, consequently, regard them as unworthy of serious attention."

Transactions of the College of Physicians of Philadelphia. Third Series. Vol. IV. Pp. 250. Philadelphia.

THE most entertaining paper is by a medical missionary in Japan, who aids his description of obstetric science in that country by three or four remarkably graphic drawings. It appears the native mode of proceeding in difficult labour is as powerful as it is simple. The forceps is unknown, and the question of turning never arises; the Japanese doctor merely inserts a fillet and loops it round any part which can be seized. A "tug-of-war" ensues, but human

muscular power failing, the mechanical powers are called in, and a windlass which finds its *point d'appui* on the tuberosities of the ischia is fastened to the fillet. In case of failure with the winch—for sometimes even it fails—the more effective and more fatal hook is employed, and with this the uterus is raked out “as we would rake coals from a furnace.” In a chapter on the meteorology and epidemics of Philadelphia, the death-rate of that city (population 860,000) is set down at 18·6 per 1,000—a very favourable ratio. Of the whole mortality exactly a fourth part occurred within the first year of life. Dr. Cleeman, the compiler, raises and discusses the question of the increase of cancer. During the years that preceded 1852 the ratio of deaths from cancer per 1,000 of total mortality was about 8; since then it has been steadily increasing so as now to reach 16·4. He does not consider that the greater precision of modern diagnosis has brought under the head of cancer many cases which would formerly have been classed otherwise, but the rise in the mortality records from this cause is not confined to Philadelphia. In the lists of deaths in London for thirty years (1845–1874) the rate has advanced from 3·4 per 10,000 inhabitants to 5·7—an increase of 70 per cent. Dr. Robert P. Harris records a case that will interest embryologists—a case of congenital ventral gestation, the subject being a girl six years old, who recovered after the discharge of the foetal mass through the abdominal wall, and lived seventeen years afterwards. As the tumour consisted of bones, organs, and other tissues resembling those of the foetus in utero, he cannot admit that the expelled mass was a dermoid cyst.

Notes for Students: Pathological Anatomy. Part I. By R. J. Lee, M.D. London: T. Richards. 1879. Pp. 29.

THE intention of this little book is excellent—viz., to assist the student when he begins to observe for himself the effects of disease on the healthy tissues of the body; and, excepting that there is neither index nor table of contents, the plan of it is fairly convenient. But it needs careful revision before it could be a safe guide to put into the hands of a beginner, and we wonder what notions of pathological processes the average student would gather from such statements as these:—“Pneumonia, or inflammation of the lungs, begins with hyperæmia or congestion, causing more or less redness; is followed by *red* or *gray hepatisation*—the first is exudation of lymph cells, the second of pus cells into the air

vesicles" (p. 12). Again:—"Chronic or Interstitial Pneumonia. If the exudation into the air vesicles and small bronchial tubes is not removed by expectoration or absorption, the tissue of the lung becomes 'thick,' 'tough,' 'fibrous,' &c." And—"Emphysema is caused by vesicles full of air"!!

Tables of the Physiological Action of Drugs. By E. A. MORSHEAD, M.R.C.S., &c. London: H. K. Lewis. 1880. Pp. 16.

In these Tables Mr. Morshead has endeavoured to arrange, systematically, certain officinal and non-officinal drugs in such a manner as to contrast their physiological actions on different centres and systems. As far as they go, the Tables fairly represent the generally received opinions regarding the actions of the substances enumerated.

Hydropathy; or, the Practical Use of Cold Water. By E. M. BODDY, F.R.C.S. 1879.

A VAGUE and undiscriminating enumeration of a number of affections in which cold water treatment has been recommended. Dr. Boddy is an enthusiast as to the virtues of what he styles the "health-sustaining fluid," but we fear that he is a very hazy and unintelligible writer.

A Handbook of the Theory and Practice of Medicine. By FREDERICK T. ROBERTS, M.D., B.Sc., F.R.C.P. Fourth Edition. In Two Volumes. London: H. K. Lewis. 1880. 8vo. Pp. 479 and 495.

WE have already on more than one occasion expressed a high opinion as to the merits of this work, which has now reached a fourth edition. From our experience of the "Handbook," we believe that it will always be popular amongst medical students, and that it is sufficiently classical to deserve a place in the book-shelves of every physician.

Our readers may remember that the first and second editions appeared in the form of a single volume. The third and fourth editions have, judiciously, we think, been published in two volumes, each of convenient size. In them Dr. Roberts has faithfully and successfully endeavoured to keep pace with the rapid progress of

Medicine in recent years. In proof of this statement we have only to direct attention to the second chapter in Volume I., on "Contagion and Epidemics." The first section of that chapter contains a very good *résumé* of the modern doctrines of contagion—namely, the chemical or physico-chemical, and the vital or germ-theories.

As regards the fourth edition, that now before us, the author has in particular carefully revised the chapters relating to the Absorbent System and the Nervous System, and he has introduced important additional matter in connexion with these subjects. We are glad to observe also that Dr. Roberts has adopted a suggestion made in our notices of the first two editions of his book, and has illustrated the chapter on diseases of the urinary organs by a series of drawings of urinary deposits. Some of these drawings are no doubt rough; nevertheless they are a step in the right direction, and considerably enhance the value of the "Handbook" to medical students. Another improvement is the use of Egyptian type in the headings to important paragraphs. By this means the eye is attracted to those points which it is desirable should be impressed on the reader's memory. Considering the size of the work the price is not excessive—twenty-two shillings; and we heartily commend it as a reliable guide not less to the practical than to the theoretical study of medicine.

How to Feed an Infant. By BENSON BAKER, M.D., &c. London: Baillière, Tindall, & Cox. Pp. 95.

THE period of infant life considered is from the birth of the child up to the time when the first, or milk, teeth make their appearance in the gums, as during this time there are more mistakes made in feeding, resulting in permanent injury, than at any other. The little book is written in popular language for the use of mothers, à la Chavasse, and the directions are thoroughly practical and useful. The chapter on "Bottle nursing" is especially a good one. He finds the following modification of cow's milk the best approximation to human milk:—Cow's milk and water, half a pint each; add a teaspoonful of sugar of milk, a couple of grains of phosphate of lime, and two teaspoonfuls of cream. We agree with Dr. Baker in believing that milk is very frequently given without being sufficiently diluted.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART III.

HALF-YEARLY REPORTS.

REPORT ON RHINOLOGY, PHARYNGOLOGY, AND
LARYNGOLOGY.

By KENDAL FRANKS, M.D., Dub., F.R.C.S.I.; Ex-Scholar, Univ.
Dub.; Surgeon to the Adelaide Hospital and to the Hospital for
Diseases of the Throat and Ear.

RHINOLOGY.

Ozæna.—Under the term “*Ozæna*” are comprised all the affections of the superior respiratory passages, accompanied by fœtor of the expired air, and the most frequent of which are situated in the nasal fossæ. The most recent works on this subject show that the tendency of authors is more and more to divide these diseases into two distinct groups, the first group comprising those forms of *ozæna* which are due to lesions of the mucous membrane of the subjacent bones, whether traumatic, scrofulous, or syphilitic (*pseudo-ozænae*), and the second group comprising those cases in which no loss of substance is found, cases which have singularly increased in number in proportion as the use of the rhinoscope has developed. With this latter class recent works have specially dealt, and the results furnished are as remarkable from a theoretic point of view as from a practical.

This class of *ozænae*, in which no lesion is found, affects children, and especially girls, arriving at the age of puberty. The parents usually state that the fœtor began to show itself within the last few months; the child finds great difficulty in blowing its nose, and the particles emitted are composed of horribly fœtid, greenish crusts. The young patient is pale and dispirited, complaining sometimes of cephalalgia. The scrofulous diathesis is not specially marked. The nose is flattened, the septum is deflected to one side so as to compress the lachrymal canal and cause epiphora. The *alæ nasi* are enlarged; but the nasal fossæ especially have a remarkable aspect to those who are well acquainted with their usual appearance.

Instead of the normal narrowness of the passage between the septum nasi and the middle and inferior turbinated bones, a true cavern is seen to exist, due to the almost complete absence of these two turbinated bones, especially of the inferior, which are reduced to mere ridges, thus exposing to view the trumpet-shaped opening of the eustachian tube, all the movements of which during phonation and deglutition are clearly seen. The whole septum and the back of the pharynx are well exposed. Abundant semi-inspissated or dried crusts cover over the various parts, and if they be removed by irrigation the mucous membrane beneath is found to be reddened, but without any trace of ulceration. At the same time it seems to be atrophied; over the inferior turbinated bone the erectile structure has disappeared, and a probe comes into immediate contact with the turbinated bone. The anatomical condition in this disease may thus be stated:—Excessive arrest of development of the turbinated bones (Michel,^a Zaufal^b), atrophy of the mucous membrane (Gottstein^c); no traces of ulceration (*a post mortem* by Zaufal and one by Hartmann^d).

This characteristic conformation may exist only on one side, Michel has seen one such case in an adult; it may be hereditary, the mother who brings the child having a nose formed absolutely in the same way; it may be complicated with mucous polypi.

Michel, who has perfectly recognised all these peculiarities, does not consider them sufficient to explain the disease. According to his views, the ozæna is the result of a chronic catarrh of the ethmoidal and sphenoidal sinuses, with retention and decomposition of their secretions. These are his reasons:—The secretions are exceedingly abundant, and the atrophied mucous membrane cannot be their source. Hence they must come from the accessory cavities. Now the antrum cannot be the seat of the disease, for as its opening is 3 centimetres above the floor of the cavity, the discharge could only be by overflow, and there are no symptoms of the cavity being full; in the same way the frontal sinuses open below the anterior extremity of the middle turbinated bone; there could be no crusts or secretions at this level. The ethmoidal and sphenoidal sinuses are the only ones which remain, whose anatomical position could favour

^a *Maladies du nez et du pharynx nasal.* Berlin, 1876. Trad. franç. par A. Capart. Paris, 1879.

^b *Aerztliches Correspondenzblatt aus Böhmen,* No. 23, 1874.

^c *Berliner klinische Wochenschrift,* 37. 1878.

^d *Deutsche med. Wochenschrift,* No. 13. 1878.

the incessant flow of mucus. This theory, then, rests on—(1) the insufficiency of the lesions in the nasal fossæ; (2) the manner in which the mucus is spread over the posterior extremities of the turbinated bones, the roof of the pharynx, and its constant re-appearance; (3) the foetor, which proves that it comes from a cavity where it can undergo decomposition, for in many cases purulent secretions are odourless; (4) the persistence of the disease, which would not exist if the mucous membrane of the nasal fossæ, which is so easily accessible, were the only seat of the disease.

Zaufal, on the other hand, considers that the conditions described are quite sufficient to explain the symptoms. The ozæna is simply the result of the size of the nasal fossæ. The mucous secretions are no longer driven forwards little by little, as takes place in the normal condition when the expired air plays on the turbinated bones. The air goes out more slowly; the mucus, no longer drawn with it, retains its position and decomposes. The same takes place in certain cases of mucous polypus in which ozæna comes on during the first few days after operation; the nasal fossa has temporarily become too large, and ozæna results, until the mucous membrane and the turbinated bones reassume their normal size and position. In a *post mortem* examination, Hartmann found the sinuses perfectly healthy. Moreover, on other grounds the arguments brought forward by Michel will not bear a moment's investigation; he pleads the insufficiency of the lesions in the mucous membrane to explain the disease, but there is no need for the mucous membrane to be altered, since the decomposition of the secretions which are left unremoved causes the foetor; the supposed abnormal increase in the quantity of the secretions results from the fact that the patient cannot blow his nose; and when he says that purulent secretions are met with which have no foetor, the answer is that this is only found in cases in which the dimensions of the nasal fossæ are normal.

Gottstein, whilst holding the same views as Zaufal, considers that as the mucous membrane is red and atrophied, and secretes muco-pus, the disease is only the third, or atrophic, stage of chronic catarrh. The child has had a cold in his head, which by degrees has passed into the hypertrophic stage, and finally has ended in atrophy, the turbinated bones following the example of the mucous membrane in this evolution. This view of the case has still to be proved. The parents never speak of the child as having gone through a period of the disease in which there was an

abundant non-fœtid discharge, accompanied by oral respiration and snuffling at night. The doctor never notes this transition from the second to the third stage ; and, moreover, in this way it is impossible to explain the fact that the disease is hereditary, sometimes unilateral, and that it appears at a fixed period. On the contrary, Zaufal looks upon the anomalies of the skeleton as the starting cause. The child is born with rudimentary turbinated bones; during the first few years, the nose being very small, the disease is, so to speak, latent; subsequently, the bones of the face develop gradually, the turbinated bones remain stationary, and at puberty the first sign of ozæna appears. This anomaly may exist only on one side, and be found in several members of the same family. This theory is certainly the most satisfactory.

The best symptomatic treatment is that proposed by Michel. He substitutes the English syringe for Weber's syphon, on account of the dangers accompanying the latter, and irrigates the nose morning and evening with a litre of water, in which is dissolved, when hot, one or two tablespoonfuls of chlorate of potassium. The caoutchouc bag should be only half emptied at a time, and the procedure should be repeated only when the first jet flows from the other nostril. In two days all trace of foetor has disappeared. Insufflations of the powdered chlorate may also be used. In order to treat the cause, Zaufal devised artificial turbinated bones. Gottstein simply recommends the use of plugs of cotton wool, the size of the thumb, which the patient can himself place in the nasal fossæ with a forceps, above and outside the level of the middle turbinated bone. The plug comes out on the handkerchief in a couple of days, covered with white mucus, liquid and odourless. Irrigation must be suspended during this treatment. There is never a definite cure.

In a later memoir, Gottstein* relates twelve new cases of ozæna. These cases presented all the characters of true ozæna, which he calls *chronic atrophic rhinitis*. Twice only was the subject scrofulous; there never was a trace of syphilis. One of these patients had an uncle and a sister similarly affected, which favours the view of a congenital malformation, rather than that of an acquired disease. A microscopical examination, which he was enabled to make on one occasion, showed that the mucous membrane had undergone a fibrous transformation, and that the glands were partially infiltrated and atrophied.—(*Revue des Sciences Médicales*. Hayem. Avril 15, 1880.)

Cohen, of Philadelphia, in a lecture on Naso-pharyngeal Catarrh,^{*} attributes the retention of the mucus in the nasal passages to destruction of the epithelium. Mucous membranes are covered by layers of epithelium which are being continually shed and renewed, like the scales of epidermis which remain in the water after a bath. The outer layer of the epithelium of the entire respiratory tract proper, nasal passages, windpipe, and bronchial tubes, with the exception of the upper surface of the vocal cords, is a columnar epithelium, provided with cilia or hair-like processes continually waving in a direction from the interior to the exterior. The province of these appendages is to brush out, as it were, any dirt, mucus, or what-not, which may be in the respiratory tract, and thus to get rid of what may be injurious. In the nasal passages these cilia are continually brushing excess of mucus from the interior to the exterior. Now, when the mucous membrane is diseased, numbers of these ciliated epithelia are destroyed and are not reproduced. Hence the accumulating mucus cannot all be brushed out; it clings to the irregular surfaces and undergoes decomposition. The gases of decomposition irritate the mucous membranes still further, and so does the mechanical retention of the masses themselves; and thus the disease is kept up and intensified, and a vicious circle is started which continues its round indefinitely, for the disease is one that is liable to continue for a series of years.

Dr. Massei, in an Italian contemporary, starting from the theory that ozæna is of parasitic origin, recommends the following treatment:—(a.) Gradual dilatation of the obliterated nasal passages by means of elastic bougies; (b.) cleaning and disinfection of diseased regions by a very weak solution of salicylic acid (1 part, 500 parts water), applied by means of a syringe; (c.) modifying local medication, by blowing calomel powder through a nasal speculum on the ulcerated surfaces. The author says that there is always an arrest in the process of healing at a certain period, but advises strongly not to give up this treatment, but to continue it patiently until total cure is obtained.

In the "Memorabilien," Dr. Dawosky describes his successful treatment of that form of ozæna called *punaïsie* (the true ozæna of Michel and Zaufal). He carefully removes all crusts, washes the mucous membrane with a two per cent. solution of silver nitrate, and every evening tampons the nostril with a plug of charpie as

thick as the finger, moistened with glycerine, and that thickly dusted with powdered alum. In the morning this is removed, and the nostril washed with solutions of permanganate of potash or zinc, in weak solution. The odour soon disappears, and by persistence a cure is effected.—(*Med. Press and Circular*, Sept. 10, 1879).

Lennox Browne (*Med. Press and Circular*, Oct. 15, 1879) maintains that a large proportion of the cases of ozæna arises entirely from the inspissation, retention, and consequent putrefaction of the normal secretion—the condition being the direct result of long-neglected pharyngeal and post-nasal catarrh. This is, in fact, the same view as that propounded by Gottstein (previously referred to), and which condition the latter styles “chronic atrophic rhinitis.” Lennox Browne urges with Dawosky the importance of carefully removing all crusts, and believes that the only way to remove them is by emollient post-nasal washings, vapour or spray inhalations, or inunctions. They should never be removed by any method involving haemorrhage, which must always lead to re-formation of the crust and, by whatever process they are removed, measures should be taken to prevent their re-incrustation. Nothing is better for this purpose than an ointment of vaseline with iodoform, which he thus prescribes:—

R.—Iodoform, gr. 5 to gr. 8.

Ether, fl. d. i. to fl. d. iss. Dissolve and add

Vaseline, $\frac{3}{4}$.

Ottar of rose, m. v. to m. viii.—M.

In post-nasal douches he uses about five to eight grains of chloride of ammonium, on account of its largely diffusing power, and an equal quantity of borax with a little glycerine, with or without carbolic acid, to about four ounces of water at 95° F., this amount serving for two douches with his post-nasal syringe. He disapproves entirely of any of the following methods advised by Dawosky:—(1) Of plugging the nostrils; (2) of using pure glycerine, which has a powerful attraction for water, and which therefore increases the dryness already complained of; (3) of using alum, tannin, or any other astringent for the same reasons, nor does he ever recommend nasal snuffs, which he believes to be contradictory of the physiological functions of the nasal organ.

In cases of actual ulceration, with necrosis of the nasal passages (pseudo-ozæna), Lennox Browne (*Brit. Med. Journal*, Nov. 1, 1879), does not find Condy's ozonised sea-salt sufficiently powerful as an antiseptic nasal douche, though it serves very well the double

purposes of a mild antiseptic, and of increasing the specific gravity of the irrigating fluid used with the ordinary anterior nasal douche in true *ozæna*. He abstains from prescribing carbolic acid for this purpose, not only on account of its danger, but also because of its taste and odour, which are to many persons most objectionable. Thymol, even in the proportion of 1 in 4,000, produced smarting in the nasal passages of a much more stinging character, and of much longer duration, than that caused by any other remedy in ordinary use and similarly applied. He therefore discards it. Salicylic acid gives, in his hands, the best results. A solution of 1 in 500 makes an agreeable non-irritating and efficient gargle or nasal douche for use with the *post-nasal* syringe, but does not serve with the ordinary *anterior* douche, because the specific gravity of the fluid is not sufficiently great. The following he recommends for this purpose:—Borax, 3 drachms; salicylic acid, 2 drachms; glycerine, $2\frac{1}{2}$ ounces; water to 3 fluid ounces. One or two drachms of this mixture to the half pint of water, at 95° F., acts quite efficiently, whether used with the anterior or the *post-nasal* douche, or as a gargle. It has the advantage over and above its antiseptic qualities of being not only non-irritating or obnoxious in taste, but, on the contrary, of being even emollient, and of agreeable flavour.

Chronic Nasal Catarrh.—Professor Allen (*American Journal of Med. Sciences*, Jan., 1880) states that the cause of an important group of cases of nasal catarrh consists in obstruction of the narea. The nasal chamber being a modified portion of the respiratory tract, it follows that its functional integrity is dependent upon the freedom with which a current of air can pass through it. Obstruction is fatal to its efficiency, for not only is the sense of smelling lost, but the unconscious effort to breathe through the nose ordinarily causes congestion and distress, and at all times the normal outflow and distribution of mucus is interfered with. Nasal mucus has a tendency to flow backward. The gentle inclination of the floor of the nose from before backward, and the dip of the turbinated bones, determine this. Nasal obstruction interrupts this flow, and occasions accumulation and subsequent inspissation of mucus, or a reversal of the current, which results in escape of the secretion at the nostrils. If it is conceded that these statements are correct, all that becomes necessary to make their application to chronic nasal catarrh is to demonstrate the existence of obstruction in that affection. This may easily be

done by examining the nares by means of a strong reflected light and by using a speculum. In the normal nasal chamber the turbinated bones do not touch the septum nasi, neither do the middle or inferior turbinated bones impinge on each other, or on the floor of the nose. Should, however, chronic nasal catarrh be present, the middle turbinated bone is often seen lying close against the septum, or the inferior turbinated bone is found occluding the inferior meatus. Sometimes perfectly healthy persons will exhibit contact over a small surface, but in such cases the contact is always found to be slight—the apposed surfaces barely touching—and a probe can be passed without pain or sense of obstruction. In the contact which has clinical significance, the author would expect to find firm pressure of the scroll and septum against one another, and some pain to follow manipulation. When the point of contact is recognised, the indication for treatment is to destroy it. To effect this, he applies local remedies by means of a pledget of cotton-wool on the end of a holder. The remedies preferred are tannic acid in combination with carbolic acid or iodoform, held in suspension in gelatine. The object of using gelatine is to enable the medicine to remain for a long time in contact with the affected parts, and, in dissolving, to form a thick fluid which measurably imitates the consistency of the normal secretions of the parts. Sometimes, in cases of pronounced contact, he employs medicated plates of gelatine.

Powerful astringents he applied by means of a pledget of cotton fastened on to the nozzle of a fine syringe, longer and much smaller than an ordinary hypodermic syringe. When the cotton reaches the desired spot, a few drops are driven out of the syringe into the cotton. It is held *in situ* sufficiently long to allow of a thorough application. The mucus which now collects round the cotton prevents it having any effect on the healthy tissues as it is withdrawn.

When the nasal septum is the cause of the pressure, owing to its abnormal deflection to one side, and prevents the relief being afforded by medication, Professor Allen has successfully met this condition by cutting away the offending osseous projections.

Nasal Polypi.—Hartmann* attributes the development of these growths to purely mechanical causes, which act in the following manner:—Separate swellings on the basis of a chronic hypertrophic catarrh of the whole mucous membrane, which project beyond the

* Deutsche med. Wochensch. 1879. Pp. 28-31.

surface, are pulled upon by the stream of air and secretion passing through the nostrils, especially on blowing the nose, and when they have reached a certain size they are drawn downwards by their own weight. On this account the great majority of nasal polypi arise from the surface or margin of the turbinated bones, as a rule the middle one. Those with a long pedicle, which extend into the naso-pharynx and lower pharynx, arise from the posterior extremity of the middle turbinated bone. Most rarely polypi arise from the septum.—(*London Med. Record*, Feb. 15, 1880.)

Zaufal,* in discussing the frequency of ear complications in diseases of the nose, says that in cases of nasal polypi he has found the ear engaged in 56 per cent. of them. He entirely agrees with Voltolini in condemning their removal with the forceps, which he characterises as a barbarous and insufficient operation. Sight is absolutely necessary for the diagnosis and treatment of these growths, and whereas Stoerk prefers posterior rhinoscopy, Zaufal generally employs the anterior and reserves the former for these cases in which the polypus is lodged in parts inaccessible to sight by the anterior method, such as the sphenoidal turbinated bone, or the sphenoidal sinus. He strongly advocates the use of reflected light, the reflecting mirror being placed on the operator's forehead. The position and mobility of the polypi are determined by the aid of a probe. Their removal is accomplished by means of a snare, Blake's modification of Wilde's snare being the one he prefers. The loop should be made of a very fine piano-string, or, in default of this, of simple untempered iron-wire. The polypus, seized at its root, is either cut across or torn out. This method causes absolutely no pain, and can be repeated until the nostril is completely cleared, provided that the field is not obscured by blood. Where the nostril is very narrow and the mucous membrane swollen, Zaufal advises to plug the passage with a thick and long tampon of cotton-wool. This is kept in for ten minutes, and on its removal operative measures are continued. When the polypi are removed, their recurrence must be provided against, and this should be done by energetic cauterisation, especially with the galvano-cautery. Next in activity to the galvano-cautery, chloride of zinc may be employed, or in its absence nitrate of silver, but this latter should be repeatedly applied, twice a week for a month.—(*Revue des Sciences Médic.* Hayem. Avril 15, 1880.)

Caro (*Med. Record*, Nov. 29, 1879) recommends the injection, by

* *Prager med. Wochenschr.* T. II., Nos. 48, 49, 50.

means of a hypodermic syringe, into the body of the polypus, of from four to six drops of pure acetic acid. He has tried it in only one case; two injections affected a cure. The suggestion of its use was derived from Dr. Ceccarini.—(*New York Med. Journal*, Jan., 1880.)

Miller (*Brit. Med. Journ.*, Dec. 13, 1879) advises that each polypus should be freely punctured by means of an acupuncture needle, and then sprayed with alcohol. Under this treatment they rapidly shrivel and disappear.

An undescribed Lesion as a cause of Epistaxis.—Little (*Lond. Med. Record*, Nov. 15, 1879) recommends an inspection of the anterior nares, and especially of the septum, before plugging either the anterior or posterior nares to arrest the haemorrhage of epistaxis. He cites four cases in illustration. In the first, he was called at midnight to see a gentleman whose anterior nares had been plugged, but the haemorrhage recurred as soon as the plug was removed. Inspection showed an erosion on the septum, about half an inch above the columna, from which all the haemorrhage came. Touched with muriated tincture of iron, on the point of a camel's-hair brush, the haemorrhage was at once arrested, and did not recur. In the second case the patient had several severe attacks of epistaxis before applying for treatment. Upon examination, a small ulcer was found on the septum, about half an inch from the edge of the nostril, near the anterior margin of the cartilage. Upon touching the spot with stick nitrate of silver the haemorrhage ceased. A second application was required the following day; no recurrence after this. In the third case he found the patient just recovering from syncope following epistaxis. The anterior nares were plugged, and, on the following day, he learned that the haemorrhage had followed the picking of a pimple on the septum. On removing the plug a spurt of arterial haemorrhage followed. A piece of styptic cotton was applied to the spot, and the patient instructed not to disturb it. There was no recurrence, and the ulcer healed in about a week. In the fourth case, also, the haemorrhage followed picking of the nostril, and continued, with slight remissions, from 10 o'clock in the morning until 4 in the afternoon. A small erosion was found on the septum. Nitrate of silver applied to the bleeding spot arrested the haemorrhage; there was no recurrence.—(*New York Med. Journ.*, Jan., 1880.)

Acute Idiopathic Perichondritis of the Nasal Septum terminating in Abscess.—Dr. Wagner (*Archives of Laryngology*, No. 1, 1880)

relates the case of a young actress who consulted him for a "boil" in her nose. In a few days the nose became immensely swollen, œdematosus and dark in colour, accompanied by a temperature of 105° and delirium. Incisions through the mucous membrane down to the septum on the left side gave exit to a thick creamy pus. The next day incisions on the right side evacuated a similar abscess. Subsequently the pus had to be drawn off with a syringe daily, and the cavity washed out with weak carbolic solution. Weeks elapsed before complete recovery. A probe introduced into the cavity of the abscess on either side touched the vomer. This is the only case of acute idiopathic perichondritis seen by Dr. Wagner in an experience embracing over four thousand nasal cases.

Naso-pharyngeal Growths.—Gussenbauer* gives the details of his procedure in the case of a woman, aged thirty-seven, for the removal of a tumour springing from the base of the skull and projecting into the naso-pharyngeal space. After narcosis, the muco-periosteal covering of the hard palate was divided in the median line throughout its whole extent, and dissected back to the alveolar processes. The processus palatini and the bony palate were then removed by means of the hammer and chisel to such an extent that the piece taken away measured 4 cm. by 2·5 cm. The tumour, a fibroma of the size of a walnut, vascular and richly cellular, which had given rise to profuse haemorrhage, was then cut from its base with the scissors—the base first compressed with the fingers, then cauterised with the thermo-cautery. Finally the soft parts were brought together in the usual manner. The patient did well, and was discharged cured on the sixth day.—(*New York Med. Journal*, Jan., 1880.)

Boeckel removed a similar tumour by first making a longitudinal incision through the soft palate, and then a transverse one, separating the velum from the hard palate at its attachment to the bone. One of the posterior palatine arteries having been divided, and a copious haemorrhage resulting, the wound was plugged, and the ablation of the growth deferred to the next day, when it was entirely removed. In ten days the patient had completely recovered. Chloroform was administered with the patient's head in a depending position to prevent the entrance of air into the respiratory passages.—(*Gaz. Méd. de Strasbourg*, No. 2, 1879.)

Cabot, of Boston, relates a case of a tumour which filled the whole right side of the pharynx, extending considerably past the

* *Centralblatt für Chir.* No. 44. 1879.

middle line, and pushing the palate and posterior pillar of the fauces so firmly forward that the tonsil was entirely concealed. Having first performed tracheotomy, the tumour, which had no pedicle, was enucleated by making an incision through the soft palate and turning the growth out with the fingers. The patient returned home cured in 18 days.—(*Archives of Laryngology*, No. 1, 1880.)

The results of Gussenbauer and Boeckel show that by anaesthetising the patient with the head low down, tracheotomy, as in the above case, seems uncalled for.

Naso-pharyngeal Polypi treated by interstitial injections of Chloride of Zinc.—Two cases are reported in which recourse was had, with marked success, to this method of treatment. The first case, a boy aged 14, consulted M. Duplay for epistaxis, which had recurred almost every month for two years, sometimes necessitating plugging of the nares. A naso-pharyngeal polypus the size of a chestnut was discovered. M. Duplay removed it by dividing the soft palate and part of the hard palate, and then passing a loop of an ecraseur through the nostril and round the polypus. The base of the growth was destroyed with the galvano-cautery. In three months a recurrence of the tumour became manifest, and then M. Duplay tried the interstitial injection of a saturated solution of chloride of zinc, by means of a Pravaz syringe. The following day a large slough was seen at the seat of injection. After the second injection, nasal respiration was re-established. In a short time all tendency to recurrence had disappeared.

The second case came under the care of M. Barthélemy, for severe epistaxis, which had reduced a boy of 14 to a profound state of anæmia.

A large polypus was discovered, which completely blocked up both nares, rendered deglutition very difficult, and even impeded respiration. Frequent and copious haemorrhages threatened his life. Several attempts were made to tear it out with a forceps passed up above the palate, but without success. A stout noose, passed through the nose and round the growth, broke when traction was made. After these attempts all haemorrhage ceased. Subsequently M. Barthélemy succeeded in dividing the velum palati, passing a loop of the ecraseur round part of the tumour, and removing a piece the size of a nut. The remainder, about the size of a large egg, he treated by injections of chloride of zinc. The boy was completely cured by nine injections, none of which exceeded five drops of the liquefied salt.—(*Archiv. Gén. de Méd.*, Mars, 1880.)

PHARYNGOLOGY.

A case of Miliary Tuberculosis of the Pharynx.—Schepelern gives the history of a girl, aged 9, who was attacked, five months previous to her entrance into hospital, with enlargement of the cervical glands on the right side. One month subsequently the left side became affected. Two months later deglutition became difficult, though there was no tendency for the food to pass into either the nose or larynx. Simultaneously with the dysphagia there came on acute salivation, cough, marked prostration, nocturnal sweats, loss of appetite and diarrhoea. The abdomen seemed in a normal state. On admission, multiple adenopathies were found beneath the right sternomastoid; they extended as far as its upper attachment, where they formed a multilobular and irregular mass. On the left side there was a gland about the size of a chestnut at the angle of the jaw, and smaller ones below this level. The soft palate was tumefied and red; slight ulceration, covered by a greenish-yellow exudation, extended as far as the pillars of the fauces and the uvula; scarcely any swelling of the mucous membrane; chiefly on the right side were seen yellowish infiltrated points, each surrounded by a vascular zone; the voice was hoarse; a laryngoscopic examination revealed ulceration of the whole free border of the epiglottis, which had become quadrangular; ulceration of the aryteno-epiglottic folds and of the vocal cords.

After her admission the palate became more and more tumefied, the yellow spots became more visible, but the ulceration did not extend. She died one month afterwards. There had never been anything abnormal on auscultation or percussion of the chest; the emaciation was extremely rapid; the temperature kept steadily rising.

At the autopsy, miliary tubercles were found on the posterior wall of the pharynx, and numerous patches of ulceration. Nearly all the glands of the neck had degenerated; some were of a bony hardness; the deeper ones contained suppurating centres. The bronchial glands were soft and vascular. Miliary tubercles were found on both pleuræ, more numerous on the parietal layer; also on the surface of the liver and along the mesenteric vessels. The upper lobes of the lungs were infiltrated with a yellow, cheesy material; the other parts contained several suppurating centres, none of which seemed to communicate with the bronchial tubes.

Schepelern lays great stress on the similarity in appearance of

this disease with lupus. Legroux gave the following points as diagnostic of the two:—Lupus starts on the pillars of the fauces and the tonsils; it produces slight excoriations and indurated spots, which ulcerate. It rarely attacks the pharynx; it more frequently spreads to the gums. Scrofulosis begins on the posterior wall of the pharynx; it does not produce isolated ulcers, which subsequently coalesce; its advance is continuous and serpiginous. It is exceedingly rare. In the above case the author infers from the clinical facts, that the tuberculosis began in the glands on the right side; thence it spread to the pharyngeal mucous membrane, and the glands on the left side were secondarily affected; hence the whole organism became involved.—(*Archiv. Gén. de Méd.*, Fév., 1880.)

Hæmorrhage, requiring Ligature of the Carotid, following the spontaneous opening of an Abscess of the Tonsil.—Dr. Ehrmann, of Mulhouse, reports the case of a young Italian, aged 22, who was admitted to hospital for angina tonsillaris of a few days' duration. Three days after admission, at six o'clock in the morning, the abscess opened spontaneously into the throat, and immediately a gush of bright red blood took place into the mouth; in a few seconds it amounted to half a litre. It soon, however, ceased, but in three hours began again, but not so violently as at first. The patient at this time was pale, bathed in cold perspiration, and with a quick, small pulse; as this latter, however, had still some strength in it, Dr. E. determined to temporise, and advised the use of ice, complete rest, &c. In a few minutes, however, a third hæmorrhage occurred, almost as copious as the two former ones together. The patient was in a state of syncope, very pale, almost exsanguin; extremities cold; the pulse thready. Immediately Dr. E. tied the common carotid below the omoloyoid, following Sébillot's advice of tying the vessel in two places and dividing it between the ligatures. All progressed favourably, and the patient left the hospital in a month and a half.—(*Gazette Méd. de Strasbourg*, No. 4, 1880.)

Adherence of the whole of the free Border of the Velum Palati to the Posterior Wall of the Pharynx.—Dr. Kuhn (*Arch. für Ohrenheilkunde*, T. XIV., p. 165) was consulted by a youth of 15 years of age for deafness of both ears and scarcely intelligible speech. The deafness had lasted for several years, and a purulent discharge had existed from the right ear for about a year. Deglutition was painful, nasal respiration was impossible, and there was

a complete loss of smell. His mother attributed his condition to syphilis, with which his nurse had been affected. The velum of the palate was found to be stretched horizontally, and adherent to the posterior wall of the pharynx, so that there existed no communication whatever between the nose and the lower portion of the pharynx. The openings of the Eustachian tubes seemed to be occluded by cicatricial tissue. Dr. Kuhn separated the velum from the pharyngeal wall by first incising it in the median raphé, and subsequently dissecting it away from its abnormal attachment. The first operation being only partly successful, it was repeated at a later date, and the parts kept separate by means of a gutta-percha plate, which was kept in position by two threads passed through the nostrils. Five weeks afterwards the plate was removed; no subsequent adherence took place, the voice improved, and the sense of smell returned completely. The hearing distance became notably increased.—(*Gaz. Méd. de Strasbourg*, No. 4, 1880.)

Extirpation of the Pharynx.—In the current number of the *Archiv für klinische Chirurgie*, Professor von Langenbeck submits to the notice of the profession an operation for the extirpation of the pharynx, and relates the histories of three cases in which he had resorted to it for the removal of cancerous growths in that cavity. Although these three cases were unsuccessful in his hands, he thinks the operation worthy the attention of surgeons, as the fatal terminations were due to the ill effects which the removal of the pharynx exercised upon the larynx rather than to the operative procedure itself. The operation, when conducted according to the rules laid down, is entirely devoid of danger, and can be performed without much difficulty. It is not intended to take the place of the various operations which have been hitherto resorted to for the removal of tumours in the upper part of the pharynx and nasopharynx, but is proposed for the extirpation of those growths, which, from their situation in the lower part of the pharynx, have been hitherto considered beyond the reach of surgery.

As regards the diagnosis of these growths, Dr. von Langenbeck points out that when they affect either of the lateral walls of the pharynx, they produce a distinct swelling in the upper part of the side of the neck, pressing the larynx to the opposite side, so that the pomum Adami is no longer in the middle line. If the tumour be situated in the front or hinder wall, the larynx will be pushed forward, and in extreme cases the pomum Adami will project on a level with the chin. If the pharynx only be affected, the voice is

muffled, the patient speaks as if he had a lump in the throat, deglutition is more or less impeded, but respiration is not affected. If the carcinoma extend into the larynx (which is very rarely the case), involving the ary-epiglottic folds or the vocal cords, hoarseness, aphonia, and stridulous respiration may be expected, but the extreme dyspnoea present in primary carcinoma of the larynx does not occur—at least it was not a symptom in any of the cases which Dr. von Langenbeck had observed. When the carcinoma affects the lateral walls, it is apt to involve the great vessels at an early period. This happened in one of Dr. von Langenbeck's cases, in which, to avoid wounding the vessels, a thin layer of the tumour had to be left adherent to them.

The entire extirpation of the pharynx without the simultaneous removal of the larynx is quite possible, on account of its loose attachment to the neighbouring parts. The front wall, although it closely follows the contour of the posterior part of the larynx, is so loosely connected with it that its separation from it, as far as the entrance into the larynx, can be readily accomplished without wounding the perichondrium. Still less firmly is the posterior wall attached to the front of the vertebral column; and when it has been cut transversely on a level with the lower edge of the soft palate, it can be easily separated from the pre-vertebral muscles by means of a blunt instrument. Laterally, also, the pharynx, except at the points of attachment of its muscles, is connected with the large vessels and other structures external to it only by loose connective tissue.

The operation is performed in the following way:—After the trachea has been opened and plugged with Trendelenburg's tampon-canula, the patient's head is drawn well back, and the face turned to the side opposite to that on which the operation is to be performed. An incision is commenced below the lower jaw, midway between the symphysis and the angle, and is carried over the greater corner of the hyoid bone in the direction of the sternohyoid muscle, terminating just above the tracheal wound. The skin, superficial fascia, platysma, and omo-hyoid are divided, the posterior belly of the digastric and the stylo-hyoid are detached from the hyoid bone, the lingual and superior thyroid arteries and the facial artery and vein are divided and tied, and the superior laryngeal nerve and its external laryngeal branch are divided. The pharynx is now opened; the larynx is firmly drawn to the opposite side, and at the same time made to revolve on its long axis, so that

its hinder surface is well exposed. The front and side walls of the pharynx are detached from their connexions, and the posterior wall is cut through transversely at a level with the lower edge of the soft palate, and separated from the vertebral column. The pharynx is then finally removed by severing its connexion with the oesophagus.

The question now arises—If the operation is itself so free from risk, and easy of accomplishment, what is the cause of the fatality which has hitherto attended it? Putting aside the second case, in which the patient, greatly exhausted by his inability to swallow food, and by the unavoidable capillary haemorrhage during the operation, succumbed a few hours afterwards—the great danger would seem to be inflammation of the lungs, set up by the entrance of saliva, secretion from the wound, or vomited matter into the air passages.

Whether the entrance of foreign bodies may be attributed to the paralysis of the mucous membrane consequent upon the unavoidable division of the superior laryngeal nerve is a moot question, as portions of the larynx in two of the cases (the arytenoid and a portion of the cricoid cartilage in one, the arytenoid and a portion of the right vocal cord in another) were removed at the same time. Dr. von Langenbeck has, moreover, seen this nerve divided in other operations, but has not found its division followed by the same untoward results. Looking to the cause of the failure of this operation, it seems questionable whether it would not have been better to remove the whole larynx. In the case in which the tampon-canula was kept in after the operation, the patient, unfortunately, died in a few hours. It therefore remains uncertain what influence the retention of this canula might have had in guarding the air passages from the entrance of foreign matter, and whether the larynx might not subsequently have so far recovered its functions as to prevent foreign matter from passing into it.—(*London Med. Record*, Feb. 15, 1880.)

LARYNGOLOGY.

Extirpation of the Larynx.—Dr. F. Lange (*Archives of Laryngology*, New York, Vol. I., p. 36, 1880) reports a case of a man, aged 74, who became attacked with periodical attacks of hoarseness in 1878, associated two months later with a frequent cough, caused by particles of food passing into the larynx during deglutition. In October, 1878, a tumour was discovered, involving the whole of the right side of the larynx, and dislocating the base of the epiglottis upwards and to the left. In February, 1879,

tracheotomy was performed; though subsequently it was proved that the tube had been inserted through the thyroid cartilage between the vocal cords. Through this wound portions of the tumour (which was a fibro-sarcoma) were removed with the galvano-cautery. In May the opening had to be enlarged, and a larger tube inserted. In October, 1879, the symptoms had become seriously aggravated, the food passing regularly into the larynx. The patient had become emaciated, and "strenuously" demanded relief from his sufferings at any risk. The tumour was felt to be about the size of an orange, and extended from the canula to the hyoid bone, passing underneath the right sterno-mastoid, and dislocating the large vessels to the right, so that the pulsations of the carotid could be felt most distinctly behind the posterior border of that muscle. The epiglottis was pushed upwards and everted, so that closure of the opening of the larynx was impossible. The tumour was movable, and was slightly raised during swallowing. After the removal of the canula, a grayish mulberry-like mass presented itself, protruding from above, similar in aspect to pale granulations, but of a moderately hard consistence. The cavity of the larynx was not yet entirely obstructed; no enlarged or infiltrated glands were to be found. Atheroma of the arteries and a very irregular action of the heart existed. A medium-sized œsophageal tube could be introduced without difficulty. On October 12th, 1879, the operation was performed. An incision was made from the hyoid bone down to the canula, and from the upper edge of this incision two cross-cuts towards the border of the sterno-mastoid muscles. The flaps thus formed were loosened to below the superficial fascia; then the canula was removed, and the incision prolonged below it to the manubrium sterni. After the re-insertion of the canula, and the complete blocking-up of the trachea round the canula with a "tinder tampon"—which Dr. Lange prefers to Trendelenburg's tampon—the tumour, the larynx (with the exception of the lower portion of the cricoid cartilage), the ala of the hyoid bone, and the interior wall of the œsophagus, which had become involved in the disease, were all removed. A tedious and difficult after-treatment followed. The whole of the hyoid bone was removed six weeks afterwards, owing to the luxuriant character of the granulations about it, which refused to yield to other treatment, and in three months from the date of the operation the patient was able to return to St. Louis. The patient could swallow liquids with the aid of a trough-shaped plate, the lower end of

which reached into the œsophagus, and which was drawn slightly forward during deglutition, by means of two threads fastened to it.

Dr. Max Schüller, in a monograph on this subject (*Extirpation des Kehlkopfes*, Stuttgart, 1880), gives a brief account of all the operations published or known to him. The operation was first devised in 1870 by Czerny; and Billroth, in 1873, first performed it on the living subject. Nineteen cases of it have now been published in addition to the more extended case by Prof. Cav. Casselli, reported to the Medico-Chirurgical Society of Bologna (*vide infra*), Dr. Lange's case being the first in America. Of these nineteen, thirteen have proved fatal. The operation has been done for sarcoma in three cases, for carcinoma in fifteen cases, and for perichondritis (from unknown cause) in one case. All three of the cases operated on for sarcoma not only survived the operation, but have remained free from recurrence. Of the fifteen from whom the larynx was removed for carcinoma, five died of pneumonia, and two of exhaustion, within two weeks after the operation. Five others died from recurrence of the disease long after the operation. Two patients—one operated on in September, 1877, by Wagner, and one in July, 1878, by Billroth—were alive at the time of writing, but there had been a recurrence of the disease in the latter. Of one case there had been no late intelligence. The recurrence usually took place, not at the seat of operation, but in the neighbouring lymphatic glands.

Complete Extirpation of the Larynx, Pharynx, base of the Tongue, Velum Pendulum, and Tonsils.—Professor Caselli presented to the Medical Society at Bologna a girl, aged nineteen, from whom he had removed the larynx, pharynx, velum of the palate, and tonsils for an extensive "lymphatic granuloma." The girl was admitted to the hospital on the 29th August, 1879. She was of light build, anaemic appearance, and had never menstruated. The sexual organs were but little developed. Thirteen months previously she experienced a slight but continuous pain in the throat, and a sensation as if a grain of corn were sticking in it. This caused some dysphagia, so that even swallowing saliva caused pain. Four months later the pain became intense, and continued so for three days, after suddenly swallowing some hot fluid. Since then every attempt at deglutition caused vomiting and severe cough, accompanied generally by dyspneal attack. Under medical treatment she gradually improved, and accustomed herself to swallow solids and liquids, though still with

great difficulty, and respiration was often completely impeded. As the disease continued to increase and gave her no rest day or night, she sought admission to the hospital, and the disease was diagnosed as epithelioma of the larynx, pharynx, base of tongue, and velum pendulum palati. In some places the disease had gone on to ulceration. At the back of the tongue, the ulcers were excavated, with raised and indurated edges. On the soft palate the loss of substance was extensive. There were no infiltrated glands in the neck. Laryngoscopic examination showed the epiglottis to be two-thirds involved by a large mass of granulation, whilst the whole circumference of the glottis was infiltrated and covered with vegetations, so as to scarcely admit a No. 10 bougie. Externally she showed only a slight tumefaction of the supra and infra-hyoidian region. Every time she took food she was attacked by severe and continuous coughing, evidently due to the condition of the epiglottis, which prevented the closure of the opening into the larynx. Whenever she attempted to eat, drink, or spit, she was obliged to close the nostrils with her fingers. Her respiration was extremely difficult and noisy. Day by day she grew worse; and at last, as she was unable to take sufficient food to maintain life, Professor Caselli determined to operate. On the 29th of September, the patient being placed under the influence of chloroform, a preliminary tracheotomy was performed with the galvano-cautery knife, and Trendelenburg's tampon-canula introduced into the opening through the 3rd, 4th, and 5th tracheal rings. Anæsthesia was subsequently maintained by the chloroform apparatus placed over the tube. The patient was then placed with her head hanging over the end of the operating table; and Professor Caselli sitting at the head of the table, the patient's head was placed on a cushion on his knees. With the galvano-cautery knife the operator made an incision in the median line from the upper end of the tracheotomy wound to the lower border of the inferior maxilla. As the wound was deepened, the sterno-hyoid muscles were divaricated, so as to save their attachments to the hyoid bone, which he hoped to preserve. The parts being held apart with retractors, the vessels being carefully drawn out of the way, the thyroid and cricoid cartilages were exposed. Preserving as much as possible of the perichondrium, the attachments of the thyroid cartilage to the hyoid bone and cricoid cartilage were carefully divided with the cautery. The cricoid now proved to be involved, and was removed in a similar manner, and the upper extremity of the trachea

secured from retraction by means of Lister's silk sutures. To obtain sufficient room, it now became necessary to divide the hyoid bone, which was accordingly done with the bone forceps in its centre, and the genio-hyoid were partly detached. Through all this part of the operation, two branches of the superior thyroid arteries alone required ligature. The pharynx was now separated at its sides and behind, and a platinum wire having been passed round the oesophagus to prevent retraction, this latter was divided at a point corresponding to the 5th cervical vertebra. The patient was now noticed to have ceased breathing. Artificial respiration was immediately resorted to, and this was followed by attempts at vomiting, due apparently to the peristaltic action incited by the division of the oesophagus. The operator then proceeded to remove a portion of the base of the tongue and the epiglottis with the galvano-cautery knife.

The next stage of the operation was performed through the mouth; the jaws were kept open with the American gag, and the Professor separated the whole of the soft palate from its bony attachments. The upper part of the pharynx was now divided opposite the posterior nares, the faucial pillars cut through, and the tonsils removed. The remaining pharyngeal attachments being divided, the whole neoplastic mass was removed through the wound in the neck. One of the pharyngeal vessels alone required the ligature—50 grammes of blood (about 13 drachms) were lost during the operation, which occupied three hours and ten minutes. Before proceeding to dress the wound, an oesophageal tube was passed into the oesophagus, and some wine was administered through it by means of a syringe. There being no haemorrhage, the wound was washed out with carbolised water (18 per cent.), the two pieces of the hyoid bone brought together with strong catgut, and the whole cavity disinfected with carbolic spray. Eight sutures brought the skin accurately together.

The case progressed subsequently in a favourable manner. Not satisfied with Gussenbauer's artificial larynx, Caselli devised one for himself, a full description of which he gives in his paper which he read at the meeting of the Medico-Chirurgical Society of Bologna, on the 7th of December, 1879. At the same time he exhibited the girl, who, he showed, was able to swallow liquids and solids, and who could speak for a length of time in a perfectly intelligible manner.—(*Dal Bulletino delle Scienze Mediche di Bologna*, Serie vi., Vol. V)

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART IV.
MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF
DUBLIN.

President—E. H. BENNETT, M.D.

Secretary—JOHN WILLIAM MOORE, M.D.

Embolism of Abdominal Aorta.—MR. THOMSON said: Through the courtesy of Dr. Edward Byrne, physician to the Smallpox Hospital of the South Dublin Union, I have been afforded the opportunity of exhibiting these specimens to the Society. They consist of the heart, a portion of the abdominal aorta and surrounding vessels, and a hernia, taken from the body of a patient who died in that institution in November last. I have been favoured by Dr. Byrne with some notes of the clinical history of the case. The woman, who was aged twenty-eight, was admitted into the hospital on the 2nd of September last, suffering from acute rheumatic fever accompanied by endocarditis. She had a temperature of 104° and was treated with alkalies. The case appears to have gone on without anything very particular to note until the 1st of November, when she awoke in the morning feeling a great numbness in both her lower extremities. On the 3rd of November the right leg was completely restored to sensibility, but the left remained perfectly numb. The limb, on examination, was felt to be quite cold and without sensation, and there was no pulsation in either the anterior or posterior tibial artery nor in the femoral artery. On the 7th of November a bluish tinge appeared in the lower part of the thigh, the line marking the discoloration being half an inch above the patella, and there was some tenderness on pressure. The bluish tinge gradually increased until the 17th, when it had pretty much the appearance exhibited in these plates, for which I am indebted to Dr. Byrne. On the 21st bullæ appeared, and there was considerable foetid discharge from them. On the 16th of December the patient died. At the time of her admission there was a bruit with the first and second sounds, and a curious friction-sound was noticed at the apex of the heart, and mistaken for pericarditis. At the *post mortem*, which I had an opportunity of making, attention was principally directed to the vascular

system. On opening the thorax a very small quantity of fluid was found in the pericardium, but there was no sign of any pericarditis. The heart was of normal dimensions and thickness as to its walls. On cutting into the left ventricle we found at the apex a mass of yellowish firmly-formed material about the size of a walnut. On attempting to remove it from the heart we found that it was firmly fixed, owing to the formation of the mass having taken place within the muscular columns at the apex of the heart. On the right side of the section we see a very considerable portion firmly wedged in. The aortic valves showed signs of inflammation, but they have unfortunately been removed inadvertently in the preparation of the specimen. In the mitral valves we have still some condition remaining which shows the existence of endocarditis. On the right side of the heart is a clot, but different in its appearance from that on the left side. It is distinctly formed of two materials—one apparently consisting of pure fibrin and the other simply the result of blood-coagulation, either occurring immediately after death or shortly before death. Passing further on, and proceeding to examine the cause of this gangrene which occurred on the left side, we traced the aorta down very carefully to about an inch and a half above the bifurcation of the abdominal aorta, where we came upon a distinct block. I now slit up the aorta and exposed a firmly-fixed mass of fibrin, with prolongations into the smaller arteries. On the left side we have all the vessels blocked up as far as the termination of the femoral artery, and on the right side, extending from the obstruction of the aorta, we have the common iliac blocked for about half an inch, and the external iliac on that side also blocked. As to the structure we have to deal with in this case, I may read to you some notes with which Mr. Abraham, Curator of the Museum of the College of Surgeons, kindly furnished me, describing what he found on an examination of some sections of it:—

“A section taking in part of the muscular substance of the left ventricle, its endocardium, and some of the abnormal deposit shows the following points:—

“(1.) A proliferation of the endocardial epithelium, which in places projects in the form of ‘vegetations,’ around and upon which fibrinous material has been deposited.

“(2.) Much of the latter has an amorphous, and elsewhere a fibrous, appearance, and into it a more or less sparse infiltration of cells (? leucocytes) seems to have taken place.

“(3.) Between the muscular fibres an inflammatory cell-growth is often to be seen.

“(4.) The fibres themselves, near the endocardium, have a granular look, and, in some measure, have lost their striation.”

The occurrence of clots in the heart is not a very uncommon thing, but the existence of a formation of this character is, I think, worthy of

bringing under the notice of the Society. These fibrinous concretions occur, we know, in certain cases of fever, and especially cases of hyperinosis taking place in rheumatic fever. The question as to the occurrence of the mass in the femoral artery and in the aorta is one open to discussion. My idea is that the first formation took place in the apex of the heart, occurring in the usual position—namely, in that part of the heart in which the circulation is less forcible and less direct—and that, after a certain time, a small portion of this was washed away, and got into the general circulation, and that this escape of a portion of the mass from the heart was indicated on the morning when she felt the numbness in her lower extremities. I believe that the escaping clot or embolus probably stopped in the popliteal artery, at its bifurcation into the tibial, and that, succeeding that, we had the ordinary symptoms of gangrene resulting from insufficient blood-supply. After that I think the enormous mass of fibrinous structure which we find here was built upon the original embolus sent down from the heart. It is quite clear that such a mass did not escape at one time. The other question that arises is—Was the mass in the arteries in reality a thrombus formed on the spot, as resulting from inflammation of the artery? I think the answer is sufficiently indicated by the clinical history of the case—namely, that its formation in the heart began very much anterior to the occurrence of the symptoms, which indicated an embolus in the vessels of the lower extremity. We have evidence also that this clot, when it first took a position in these arteries and produced symptoms, did so when there was no inflammatory process going on in the patient, so far as temperature and pulse could signify. The specimen of hernia which I have from the same body was irreducible. It became very tense during the treatment of the patient in hospital, as Dr. Byrne notes, and he succeeded in emptying it of a large quantity of flatus on different occasions; but the tumour never could be thoroughly reduced, and we now have an opportunity of verifying that. I find that it was a hernia of the cæcum which had escaped through the femoral ring. It is adherent to the anterior portion of the margin of the ring. The adhesion is very close, and the hernia is in that sense irreducible. During the treatment of the case this hernia became very much inflamed, and an artificial anus formed. In the proceedings of the Society some years ago a case of cardiac thrombus on the right side was shown by Dr. Hayden. He believes that the greater proportion of the thrombi occur on that side; and in that respect he differs from Dr. Bristowe, who goes into the other extreme, and says that the great majority occur on the left side. In the particular case that Dr. Hayden showed, the right side of the heart was entirely blocked up with a great mass; but it could not have been *ante mortem*, because with the ventricle blocked up by such a solid mass the patient could not have lived. On the left side there was a thrombus which was peculiar in this sense—

that, having an adhesion to the apex of the heart such as exists here, it became very much prolonged, followed the course of the aorta, and got between the edges of the aortic valves, and in that way obliterated the second sound of the heart. That was observed during life, and was accounted for at the *post mortem* by the thrombus, which grew till it extruded itself from the heart through the opening, and prevented the valves of the aorta from closing.—*February 7, 1880.*

Melanotic Carcinoma of Thigh.—MR. WHEELER said: This specimen is nearly the entire of a tumour which I removed from a patient who was admitted under my care into the City of Dublin Hospital, on the 15th of January of this year. He had a painful tumour in the thigh, but the annoyance of which he complained was more soreness than actual pain. It was situated in the outer and back part of the left thigh, five inches above the external condyle of the femur, and was oval in shape, being about $2\frac{1}{2}$ inches long by $\frac{3}{4}$ of an inch broad. The longer axis lay parallel with the axis of the limb. It was very soft and movable, and there was some tenderness about its posterior part, while its anterior part was very tender. Notes of the case were taken by Mr. Davis. The man could flex and extend the limb without any inconvenience. The tumour did not move with the movements of the muscles of the thigh, and had no nodular feel and no fluctuation. There was the mark of an incision which had been made into the thigh some two years before, when he was in another hospital, the surgeon mistaking it for an abscess. He states about three years ago he fell and hurt his thigh, and about two months afterwards he first noticed the swelling. Previously he had felt no inconvenience; but from that time on he experienced some soreness in the tumour, although nothing to speak of. He submitted to an operation for its removal, and the surgeon, under the impression that the tumour contained fluid, made a free incision into it, but nothing came but blood. After he left that hospital it was greatly reduced in size, but he received a number of blows on it, which made it rather painful. When I saw the tumour had an obscure fluctuation I made an incision over it in order to remove it. I found it dipped into the muscular interstices of the thigh. There were no glands enlarged in the groin nor any swelling of the limb below. Before the operation the man suffered excruciating pain the moment you touched him. This may have been on account of some nerve-filaments caught in the cicatricial tissue, or in consequence of the proximity of the tumour to the great sciatic nerve, which was about an inch and a quarter from it; but there were no nerves running into the tumour so far as I could see. The vessels which are seen give the idea of its being a plexiform angioma. A microscopic examination was made by Dr. Abraham, who gave me the following description of it:—

“After examination of numerous sections of the soft brown masses

themselves, as well as of the neighbouring adipose and connective tissue, I have come to the conclusion that the growth is a soft, and probably melanotic, carcinoma. In the fragmentary, dark, clot-like masses, parts of the section show nothing but a granular, irregular reticulum, apparently breaking down, and with degenerating masses scattered about. Towards the periphery of some of the sections the reticulum becomes smaller, and the meshes are occupied by collections of large irregular cells of all shapes and of different sizes. These cells increase so much in number in places that the alveolar reticulum cannot be seen, and, on a casual examination, such a mass of them might be put down as sarcomatous. At the edges, where they have become broken off, these cells are seen to have the old-fashioned typical cancer characters—particularly in their varying shapes. They are evidently fast-growing, for many of them contain two or three nuclei, and one or two enlarged showed no less than six nuclei, with an evident endogenous production. A great characteristic in this case seems to be the rapid degeneration of these cells, many of them showing in their substance pigments and fatty granules.

"In the neighbouring tissues an infiltration of the growth is quite plain in many places, both among the fat-cells and among the connective-tissue bundles. In the latter situation I notice that there is a tendency for the cancer-cells to follow and surround the blood-vessels, some of which are thickened and seem to have similar cells within the substance of their walls. The endothelial cells also of some of the arteries appear to be hypertrophied and swollen."

I have not the entire of the tumour, as a good many pieces of it were lost. It was not capsuled, but infiltrated amongst the muscles, and I had great difficulty in removing the entire of it. The patient is progressing favourably.—*February 14, 1880.*

Enteric Fever without Rose-spots or Diarrhoea; Cerebral Symptoms followed by Death.—DR. J. W. MOORE showed a portion of the ileum from a case of enteric fever without rose-spots or diarrhoea, in which cerebral symptoms supervened, and the patient (a young man aged seventeen years) died on the nineteenth day of the disease. He had been twelve days ill before his admission to the Meath Hospital. His illness commenced with severe headache and slight shivering. The headache became intense, and was accompanied by deafness, vertigo, and continued want of sleep. His bowels had not been moved for five days before admission to hospital, nor did they move until an enema had been administered. No rose-coloured spots could be detected. The diagnosis of typhoid fever was made, notwithstanding the absence of diarrhoea and rose-spots. On the twelfth day he received another enema and was given bromide of potassium. The second enema brought away two motions—the first solid, and the second fluid and pale in colour. On the thirteenth day the report

was that he had slept well after his draught. On the evening of the fifteenth day, Mr. Hamerton, who had charge of the case, and to whom I am indebted for these notes, found the sleeve of the patient's shirt torn in pieces, his head buried under the bolster, and his hands extended over his head, grasping at some imaginary object. There was well-marked subsultus, and he appeared to be in a state of true coma vigil. His temperature, of which I present a chart, never exceeded 102·4°. When he came into hospital he had a singularly low pulse, it being only 70, though his temperature was then 101·8°. From the sixteenth to the last day of his life, his temperature fell gradually but considerably, no motion passed from his bowels, and a heavy stupor deepened over him. There was ptosis of the right eye, with protrusion of the eyeball. Subsultus was also well marked. His heart was found to be acting violently, while the pulse at his wrist was small and weak. In the evening of the eighteenth day he had complete dysphagia and could swallow nothing. He died at five o'clock the next morning, being the nineteenth day of his illness. I confess that on account of the threatening nature of his head-symptoms on the morning of the sixteenth day, I felt considerable doubt as to the correctness of my original diagnosis of typhoid fever. I accordingly made a *post mortem* examination five and a half hours after his death. Rigor mortis was well marked. There was little or no subcutaneous fat. His chest was badly shaped, being narrow, flat, and long. The internal examination disclosed a normal amount of serous fluid in the pericardium. Baillie's spots on the heart were very perceptible. On section of the lungs occasional cheesy deposits were found. There was no fat in the omentum. The mesenteric glands were slightly enlarged. The lower part of the ileum for eighteen inches above the ileo-cæcal valve was completely collapsed and almost empty. Above that there was a region of great hyperæmia, and the intestine was distended with gas and faecal matter. The fæces were not of that bright ochrey colour which is so usual in cases of typhoid. Above the ileo-cæcal valve Peyer's patches were extensively diseased, presenting the characteristic appearances of the second and third stages of the lesion of enteric fever. The mesenteric glands were to some extent enlarged. I undertook the examination of the head with a considerable feeling of interest. There was a great amount of effusion in both lateral ventricles. The brain, after the blood had been drained away, weighed 65 oz. I presume some deduction is to be made in consequence of the extensive effusion into the lateral ventricles. The arachnoid membrane at the base of the brain was slightly thickened and opaque, but no distinct evidence of meningitis existed. The spleen is slightly enlarged, but otherwise tolerably normal. The kidneys were larger than healthy kidneys. The spleen weighed 9 oz., the left kidney 6 $\frac{1}{4}$ oz., and the right kidney 6 oz. The stomach presented the rugose appearance observed in rigor mortis of that organ. The two

points of interest in the case are the diagnosis of enteric fever in the absence of rose-spots and of diarrhoea, and the negative results of the examination of the brain and its membranes after the occurrence of such defined symptoms of cerebral meningitis. According to the late Dr. Murchison, rose-spots were found in 4,606 out of 5,988 cases of enteric fever admitted into the London Fever Hospital in twenty-three years—that is, in 76·92 per cent. of the cases. The same authority states, in his classical work on the "Continued Fevers of Great Britain," that diarrhoea was present in 93 out of 100 cases, but he adds that subsequent experience satisfied him that the diarrhoea was absent in a larger proportion, or in fully one-fifth of the whole number, and that those cases were usually mild and recovered. Where the two prominent symptoms of the disease are both absent, as in the present case, the likelihood of the diagnosis of enteric fever being correct is, of course, diminished; but I based it on the age of the patient, and the fact that we were face to face with a continued fever running on for twelve days, with apparent absence of danger and a moderate range of temperature. The head-symptoms were not more pronounced than they would be in many cases of enteric fever in the third week. Perhaps the most interesting part of the case is the light it throws on the nature of the cerebral complications in fever. During the last two or three days of his life the patient presented the most marked symptoms of cerebral mischief, or even of cerebral meningitis, and yet at the *post mortem* examination the appearances were almost negative. The case illustrates the observations made by Dr. Stokes on the nervous or cerebro-spinal symptoms of fever. He says:^a—"It may be held that of the various symptoms indicative of suffering of organs in fever these are the most remarkable, and, when developed to a certain point, the grounds of a worse prognosis than any others. And yet, so far as investigation has gone, they are less often connected with organic change than those belonging to the digestive, respiratory, or circulatory systems." He adds that the assumption of inflammation of the brain in the presence of violent nervous symptoms in fever constitutes one of the greatest dangers to which young physicians are exposed when they come to deal with the most formidable complications of the disease—aye, and old physicians, too, whose clinical education has been imperfect. That actual cerebritis does occasionally occur in fever is, in his opinion, certain; and he quotes, in support of this view, some of the remarkable cases Dr. Hudson reports in his admirable treatise.^b One of these cases had a singular likeness to that under discussion, for it is stated that "the patient, from the time of his admission, lay in a state of increasing stupor, with ptosis of one eye, strabismus, retention of urine, and final dysphagia."—February 21, 1880.

^a Lectures on Fever. Page 276. London: Longmans, Green, and Co. 1874.

^b Lectures on the Study of Fever. 2nd Edition. P. 252.

Wounds of the Kidneys; Fractures of the Femur, Humerus, and Radius.—DR. E. H. BENNETT said: The specimens I present illustrate the remote results of wounds of the kidneys and some points of interest in relation to fractures of bone. The woman from whom they have been taken had been a patient in Sir Patrick Dun's Hospital for a very short time during the frost of the winter before this. At that time she suffered only from a Colles' fracture. On the night of Sunday, the 9th of November, during the cold weather, she was admitted again into the hospital in a condition of the most profound collapse—so profound that I thought she was moribund. She was vomiting incessantly. It appeared that on the Saturday evening previous, between three and four o'clock, before it was quite dark, she took a ladder outside the cottage in which she lived and placed it against the wall for the purpose of cleaning a window. While she was doing so she and the ladder fell together to the ground. The fall was a small one, the cottage being low, and one would have supposed would have produced but a limited injury. She was taken up by a cabman who was washing his cab in the lane, carried into her own room, and laid on the floor. There was a coke fire in her grate which had been made up just before the accident. She lay in the position in which the cabman placed her until the following evening—some twenty-six hours—absolutely without relief of any kind, unable to rise, unable to reach either water or food, and without being able to keep the fire up. She made futile efforts to rise, but did not cry out, and although there were many persons in the houses adjoining, no one came to her assistance. She lay in a state of profound collapse, and it was not until late on Sunday evening when her husband, who was employed on board one of the boats in the river, came in and found her in the condition I have described. When she was brought to the hospital her stomach rejected everything that was given to her in the shape of food or stimulant. It was evident that she had sustained a fracture of the lower third of the left femur, and it presented the greatest degree of displacement that I have ever seen in such an injury. It was an extremely oblique fracture, and she was so thin that we were able to sketch the contour of the fracture on the bed card. The point of the upper fragment projected downwards and outwards below the head of the fibula, and its sharp-pointed extremity was tending to come through the skin, which was discoloured and all but perforated. I reduced the fracture with facility. After the reduction I found that the length of the limb was almost completely restored, and in consequence of the profound state of collapse the patient was in the bone readily remained reduced. Once reduced it remained so with the ordinary application of a Liston's splint. An embarrassing part of the case was that she had also a fracture of the humerus on the same side close up to the shoulder-joint. The bone projected towards the anterior fold of the axilla, and the appliances for

securing the fracture of the femur greatly interfered with the management of the humeral fracture. She had in addition, though we did not notice it at first, a fracture of the index finger on the opposite side, so that there were three fractures caused by the one somewhat trivial fall. I did the best I could for her with warmth and restoratives, and left her, thinking she would be dead in the morning. To my great surprise, on visiting her next morning, she was alive; and now a new symptom was added—she passed involuntarily in bed great quantities of blood *per urethram*. It was an intermittent stream of blood with but little urine intermixed. This went on for some twelve or fourteen hours, and greatly depressed her. She was so low that I could not arrive at a diagnosis as to whether the haemorrhage was due to a fracture of the pelvis and consequent wound of the bladder, or whether it was due to a wound of one of the kidneys.

I examined the pelvis with much care, but detected no fracture; but not detecting a fracture of the pelvis by direct examination during life is but poor evidence that it does not exist. The phenomena are very often greatly concealed. She had an extremely low pulse and temperature at first, but these conditions gradually improved. The haemorrhage disappeared slowly, and by the thirteenth day after her admission her temperature had risen to 100° and her pulse to 104. From that on she had an oscillating fever temperature which varied from 100° to 99° in the mornings, and was between 100° and 102° in the evenings. After three weeks her condition became so urgent that I abandoned the treatment of the thigh by the long splint, and put the fracture up in plaster-of-Paris, with great relief to her. She was able to be supported in bed, and the embarrassed respiration that existed gradually disappeared. The haemorrhage disappeared, but she had symptoms of cystitis with painful micturation. Her urine had a muco-purulent deposit and was alkaline. On the 29th of December her fever had greatly abated, and she was able to be lifted up out of bed and moved into a chair in the first week in January. The fever had then almost left her, still she flushed in the evening. In the first week of February her convalescence seemed almost established, her only troubles being occasional urinary irritation, slight hectic flush in the evening, and a vague abdominal pain at both sides. On the 4th of February she got a sudden attack of violent pain; her abdomen became distended, her bowels ceased to act, with increased temperature and accelerated pulse. I thought peritonitis had occurred, but these symptoms passed away after two or three days. Her bowels again acted, but from that time forward she had a continued and increasing pain which was ill defined as to its position, sometimes occurring in the umbilical region and sometimes at the groins of both sides. Of this no distinct explanation occurred to me; but as the temperature rose and fell with the oscillations of the hectic, I inferred that an abscess had

commenced in the kidney on the left side, as the pain was greater there. She passed numerous grains of gravel and small calculi, their main constituents bone-earth, the form of stone commonly met with in cases of traumatic abscess of the kidney. She gradually sank and died yesterday. She was a woman of tall stature and well made, but extremely thin even before the injury, and had consequently become wasted to an extreme degree by the effects of her illness. On opening the abdomen a phenomenon presented itself with which I am not familiar. The whole of the true pelvis and viscera of the abdomen, including the ileum, the mesentery, and the walls of the abdomen, were covered with a black pigment. As I passed my hand into the abdomen it stained it black, and also stained the scalpel. It was of a smearing character, and could be removed on the blade of the scalpel. The deposit was greatest in the lowest part of the pelvis. I examined this deposit to-day, and believe the explanation of it to be that it was caused by blood extravasation which absorbed all except an altered pigment. The epithelial cells are deeply stained in different degrees with it; in some places there are large spherical drops like oil. I do not like to make a positive assertion about it, but I think this pigment is in all probability due to an escape of blood into the cavity of the abdomen at the time of the injury, which is now three months ago. The last portion of the blood so escaped that would have been absorbed was the altered blood pigment; and, as has been seen in other cases, the infiltration of the surface cells has taken place. I have not seen these appearances very often, if ever before. On examining the pelvis we found no evidence whatever of anything like a wound of the bladder. I found a stone of small size in the bladder, but it was only one of many which came down from the kidneys. You can see on the left side, at the orifice of the ureter, another stone of about the same size. In the lumbar region on that side there occurs all round the ureter a certain amount of adhesion; and on trying to dissect out the ureter I opened an abscess of great size lying in front of the psoas muscle and round the anterior portion of the pelvis of the kidney; it communicated with the hilum of the kidney. At one point there is a distinct cicatrix of the kidney, indicating a wound which, I suppose, was the starting-point of the renal trouble. The condition of the opposite kidney makes the case peculiarly interesting. Our diagnosis was perfect in so far as it pointed to an abscess of the left kidney, and attributed the haemorrhage to it; but when we came to examine the opposite kidney we found the ureter perfectly healthy, but on opening it a muco-purulent secretion escaped. The condition of the bladder near the ureters did not suggest the extension from the bladder upwards of inflammation such as we see in chronic disease of the bladder and urethra. I do not think there was any prolongation upwards of the disease by way of the ureter, which is of normal size. The right lobe of the liver was glued both to the walls of the hypo-

chondrium and to the kidney by a recent adhesion. This kidney was also wounded, and suppuration to a less extent than on the opposite occurred in it. The cause of death was, I think, the wounds of both kidneys; and it seems strange that these injuries and also the fracture of so many bones could have been inflicted by so small a fall. There was no fragility of the bones, or any condition predisposing to fracture; on the contrary, the bones were exceptionally strong, firm, and hard under the saw, and did not exhibit any signs of senile atrophy. There is nothing exceptional to note about the fractures, which are united by a callus as yet incompletely ossified, except that of the radius, in which union is of course completed.—*February 28, 1880.*

Tubercular Fever.—DR. FINNY said: These specimens of brain, lungs, liver, spleen, and kidney were furnished by a case of the terrible—because unfortunately, as I believe, incurable disease—tubercular fever. The patient, a coachman by occupation, thirty-eight years of age, was admitted into the City of Dublin Hospital on the 13th of last month. There was no family history. He had always been tolerably healthy, but had been subject to colds in consequence of the nature of his occupation, which exposed him to frequent wettings and variations of temperature. He was, as he described it, a “regular moderate drinker”—the meaning of which was that he took about three glasses of whisky and two pints of porter per diem. On Sunday, the 25th of January, while he was driving in the Phoenix Park, he suddenly brought up a quantity of dark-coloured blood, and for twenty minutes afterwards continued to expectorate blood, but unaccompanied by coughing. After he got home this haemorrhage returned, and was stopped by a bottle of medicine which he got. A heavy cough followed with expectoration, but there was no blood. A few days afterwards he was attacked by severe epistaxis, which came on both while he was awake and while he was sleeping, and was followed by shivering. His voice had been somewhat husky, and he was then suddenly seized with aphonia. It was principally for relief of the last-mentioned symptom that he came to hospital. He also complained of stitching pains in his right side, which extended from the nipple round to the angle of the scapula. At the time of his admission his sputum was streaked with blood, but it was not then, nor at any time, copious. For ten days it continued to be haemorrhagic, and then became muco-purulent and frothy. The blood seemed to come from the pharynx and throat, as they were intensely injected. There was evidence of pleuritic friction on the right side, and this was followed by physical signs of pleural effusion. These signs remained to the end. In the course of the case crepitant and muco-crepitant râles developed throughout both lungs with slight percussive dulness. The patient's appearance was then that of a person suffering

from the deep congestion of cyanosis. His lips, mouth, the lining membranes of his gums, and his fauces were of a deep purplish-red colour, with prominent vessels ramifying on the uvula and arches of the palate, and he complained of soreness about the throat. His larynx, which was of the same deep purple hue, showed oedematous swelling of the aryteno-epiglottic folds and general vascularity; the capillaries of his cheeks, nose, and forehead were likewise turgid. Physical examination revealed enlargement of the liver and spleen—the former being uniformly enlarged four inches below the costal arch, with a resistant defined edge. His urine was of normal specific gravity, and contained no albumen. His temperature was always that of fever, ranging from 100° to 104°, while the pulse was invariably above 110, and the respiration was rapid and out of proportion. The other general characters and symptoms were similar to those that occur in enteric fever, to which fever, as the members of the Society are aware, this tubercular fever is so closely assimilated in many points. Only on two occasions, while he was under treatment by salicylic acid, was his morning temperature higher than that of the evening. He lay generally on his back, but towards the end of his life on his right side. This decubitus was the more remarkable as his respirations were extremely rapid—ranging from 40 to 64 in a minute. He had none of the dyspnœa of bronchitis or asthma, or cardiac debility. He became gradually worse from day to day, lying in a semi-comatose condition, and not answering questions unless when spoken to loudly. His lips and gums became covered with sordes. Two days before his death he became delirious, got out of bed, and talked about his business. On that day, and the following, which was the day of his death, his temperature fell three degrees. From the history and symptoms there was little doubt that the case was one of tubercular fever—while the epistaxis and turgescence of the superficial capillaries were due to the state of the liver, which was probably in the first stage of cirrhosis. Examination of his lungs showed nothing which pointed to the nature of sthenic, or catarrhal pneumonia in the ordinary sense of the terms, nor did the fever correspond with pneumonic fever. As his case progressed the respiratory sounds became coarser. There was a general absence of resonance all over, but more particularly between, both scapulae.

The *post mortem* examination was made yesterday. The liver showed a good example of commencing cirrhosis in its first stage, having nodules at the edges, and presenting a yellow granular appearance on section. The spleen is enlarged, very firm to the feel, covered with minute white bodies, which I believe to be miliary tubercles, and which are attached to the serous covering of the gland. Similar tubercles were found through the whole body. The kidneys, which were not in a state of cirrhosis, presented in the cortex an excellent sample of commencing

miliary tuberculosis. The lungs over their whole surface, and particularly in the fissures between the lobes, are covered with these tubercles. On section of the lungs numbers of the white bodies termed tubercles are also seen, not only under the pleura, but throughout their entire substance. The brain contained a number of minute tubercles, especially in the pia mater generally, the arachnoid of the base, and the posterior surface of the cerebellum. The choroid plexus was also studded over with small white bodies. The case is, therefore, a typical one of general miliary tuberculosis—of, however, a very rapid course, as from the day he first spat blood to the day of his death thirty-six days elapsed; and it is an open question if the tubercular fever had existed then and not ten days later. It is clear that the epistaxis had nothing to say to the tubercular conditions, but was brought on by cirrhosis induced by frequent drinking of alcohol. Four years ago I brought before the Society another case of acute miliary tuberculosis with fever similar to this, except that the symptoms referred mostly to the brain. The case had been sent to hospital as one of enteric fever. The duration of the case was one of the shortest on record, as it lasted not more than twenty days. An examination after death revealed general tuberculosis, but the greatest number of tubercles were confined to the brain.—*March 6, 1880.*

Thoracic Aneurism.—DR. A. W. FOOT exhibited a specimen of aneurism of the thoracic aorta which occupied the ascending and transverse portions of the arch. Although of considerable size it had given rise to no symptoms during life, nor had the patient ever referred to any symptoms directing attention to the anterior part of the chest. The preparation was taken from the body of a well-made and fine-looking man of forty-four years of age, who had been admitted to the Meath Hospital, complaining of a cough of six months' existence. He presented the signs and symptoms of chronic broncho-pneumonia. A few days before his death the expectoration, which had been colourless, became tinged with blood intimately incorporated with it. Twenty-four hours before his death he got a sudden attack of dyspnoea and cyanosis, which was relieved by ether, administered by the mouth and subcutaneously, but which proved fatal in a second attack.

The preparation shows that the conditions for rupture of the sac into the trachea had almost been completed—a minute slough has already occurred in the mucous membrane of the trachea between two of the rings, but the opening left by its separation is plugged by a piece of the white laminated fibrin of the sac. Above the situation of the sloughed portion the mucous membrane was raised and prominent into the trachea in the fashion of a boil about to open.

The complete latency of this aneurism, as regards signs and symptoms, is an accident of the disease which has frequently been brought under

the notice of this Society. In explanation of the absence of stridor from the pressure on the windpipe, Dr. Foot pointed out that the sac impinged directly upon the crown of the arch of the trachea, and the great resistance which cartilage offers to aneurismal pressure—a resistance which often long outlasts that offered by bony structure.—*March 6, 1880.*

Aortic Aneurism communicating with the Pulmonary Artery.—DR. FINNY said: This is an example of an aneurism of the ascending portion of the thoracic aorta communicating with the right pulmonary artery. The man from whose remains it was taken (a cab-driver aged fifty-four years) was admitted into the City of Dublin Hospital on the 28th of last February. He was well known in the neighbourhood, and I myself had often seen and employed him. His appearance was made remarkable by a kind of purplish flush on the cheeks and nose. The history which I obtained from him was shortly the following:—Since the commencement of the winter he had suffered from shortness of breath whenever he took any very great exercise, and also constantly from cough, for the relief of which he had made frequent applications to the hospital for cough mixtures. These relieved the symptoms, and he continued at his work to the very day of his death, which was the day of his admission into the hospital. On the day before his death he had carried a box belonging to a servant who had hired him to the fifth story of a house. It was too much for him, and he felt very much exhausted; and he thought that over-exertion on that occasion was the cause of his death—an opinion in which I believe he was right. He spent a bad night following the day on which he made the effort, but was nevertheless able to get up the following morning and wash his cab, although feeling so weak as to be hardly able to do so; and between twelve and one o'clock in the day he was brought to the hospital, gasping for breath, almost speechless and pulseless. His extremities were cold and his pulse was small and quick. Restoratives were given to him, and I saw him about two hours after admission. He was sitting up in bed, holding the bedposts, and labouring violently for breath. His face was deeply cyanosed, particularly on the malars and ears; the lips and about the forehead and nose were pale. Both legs were œdematosus. A hasty examination of his chest showed no sign of either consolidation or effusion in the lungs or pleuræ, but that there was emphysema of the lungs with displacement of the liver and heart. On percussing the sternum, the clear sound of the lungs diminished from below upwards, and a portion corresponding to the first bone sounded comparatively dull; over this, and over the whole sternum, a loud double murmur was heard. This could not have been due to regurgitation from the tricuspid opening, as there was no intensification of the first sound below. I ventured to suggest double aortic disease, with aneurismal dilatation of the aorta. Inhalation of nitrite of amyl was practised,

which gave him great relief, and the pallor of the portions of his face that had not the purple marking seemed to be less marked after it, and after the administration of ether, which also was given hypodermically and by the rectum. I mention these points in so far that they justified me in looking on the state of the patient as one of asthenia of the heart rather than cyanosis from obstruction on the right side. He was soon relieved so as to be able to speak in less broken sentences, and to tell me the history I have detailed above. In this condition he remained until evening. His respiration then became somewhat more laboured, and he sank quietly about twelve o'clock at night. On examination the lungs were found to be greatly emphysematous on both sides. Portions of the lungs were mapped out at the interlobular spaces by very bright red lines—of too red a colour to be the indices of mere congestion. In order to show the specimen it was filled with paraffin wax from the carotids, and while that was being done it was noticed that the more wax was poured in, the more seemed to come out at the pulmonary artery.

The first point which is observable in this specimen is the smallness of the heart and the absence of hypertrophy. It was recently stated here by some gentlemen who showed pathological specimens that hypertrophy of the heart was the rule in cases of aneurism. I take exception to that statement, and would refer to what Dr. Walshe states in the fourth edition of his work on "Diseases of the Heart," viz.:—"Overgrowth of the heart may certainly follow in a certain share of cases, especially when the sac originates in the vicinity of the valves. But it is equally certain (this statement is made on *post mortem*, in addition to clinical, evidence) a very large sac of some years' growth, and situated in that part of the vessel, may fail to induce the smallest increase in the heart's bulk." In the present case there is no hypertrophy of the left ventricle. On opening the pulmonary artery we found that the wax had filled the artery, and had taken the shape of the valves. The sac of the aneurism appears to have somewhat compressed the right pulmonary artery within half an inch of its origin, and an aperture is found extending between the anterior wall of the pulmonary artery to the back of the aneurismal sac. The case presents a mode of communication between the aorta and the pulmonary artery which is not by any means common. As long as I have been attending the meetings of this Society I cannot call to mind any other instance where the aneurism opened into the right pulmonary artery, although I know there are several cases on record where the aneurism opened into the common pulmonary artery at its right side or back, just after its origin.

While I was clinical clerk of Dr. Stokes, in the Meath Hospital, I met with one case in which the aneurism opened into the conus arteriosus below the valves, but I am not aware that this is a frequent mode in which an aneurism may open, and the case I exhibit is still rarer. I

believe that in the present case the aneurism must have existed in the patient for a very long time—possibly for some years, and, at all events, for several months; and an interesting point about the case is, that with a sac like this the man should have been able to follow the arduous occupation of a cabman, where so many times a day the work of lifting heavy boxes and other goods devolves upon him. This man experienced no pain and presented no symptoms of stridor, peculiar dysphonia, or laryngeal hoarse voice, which is common where there is pressure on the recurrent laryngeal or other branches of the pneumogastric nerve. Up to within two or three hours before his admission to hospital, he was undergoing severe manual labour. His mode of death was due, I believe, to muscular weakness of the heart—in fact, to overstrain when already weakened. I have known many cases of thoracic aneurism in which the patients died suddenly without rupture of the sac, and I think that in the present case the rapid death of the patient was due to weakening of the heart caused by the extreme strain put upon it on the afternoon of the day before his death. I also think that communication between the two sacs must have occurred only about the time when he experienced the exhaustion of that afternoon. As at the same moment the blood was expelled at systole into the aneurism and the pulmonary artery, and the blood reached the pulmonary vessel, as we may conceive, an instant before the full expansion of the aneurismal sac took place, it is very probable that the circulation through the pulmonary artery was not much mixed with arterial blood; while, possibly, during diastole a very small quantity leaked through, and, being impelled at next systole, caused the bright red lines which were noticed in the interlobular spaces of the right lung.—*March 13, 1880.*

Hyperpyrexia in Enteric Fever.—DR. J. W. MOORE said: On the 21st of February I laid before the Society a case of typhoid fever in which there were very severe head symptoms, and, after death, little or no evidence of true meningitis. The case I present to-day is also one of typhoid fever in which very severe cerebral symptoms were present, and which is also interesting in consequence of the occurrence of unusual hyperpyrexia before death. For the notes of the case I am indebted to my clinical clerk, Mr. Donald Grant.

A girl, aged twenty years, was admitted into Cork-street Fever Hospital on the 8th of this month from one of the city dairies. She appeared to have been nine days ill before her admission, but we could not obtain any accurate account of her clinical history. When she was admitted her face was flushed, she had a heavy, listless expression; her tongue was furred, but its edges were clean, and her lips were free from sordes. There was no trace of an eruption on her skin, which was perfectly clear. Her abdomen was distended, and her bowels were relaxed. The pulse

was markedly dicrotic. The cardiac and pulmonary sounds were normal. The patient lay on her back, and answered questions very slowly, but quite intelligently. A diagnosis of typhoid fever was at once recorded. On the evening of her admission the temperature in her axilla was 104·2°, her pulse was 124, and her respirations were 44 per minute—the breathing being very nervous in character. On the night of the tenth day of her illness she was almost completely without sleep. She seemed to hear and understand what went on around her, but seldom spoke. On the eleventh day the cerebral symptoms became very marked, and the cerebral stain (*tache cérébrale*) was readily produced on her forehead, the back, and over the surface of the body generally. There was great subsultus tendinum, which affected the muscles not only of the forearms, but also of the neck and face. Her tongue had now become very dry; there was dribbling of urine from the over-filled and paralysed bladder, so that from this time until her death the catheter had to be used twice a day. On the thirteenth day she had no sleep, and her pupils were unequally dilated, the left being larger than the right. The state of her bowels was at this time well under control. No change had occurred in the respiratory symptoms, but the rate of her pulse was steadily increasing. On the morning of the fifteenth day her temperature fell to 102°, her pulse being 148, and her respiration 42. This want of accordance in the symptoms led us to have but faint hopes of amendment. In the evening the temperature rose to 106·4°, her pulse was 180 per minute, and her respirations were 64. She was given a cold bath, the temperature of the water being at first about 70°, and afterwards reduced to 60°. On removal from the bath she was placed in a wet sheet, and packed with blankets for half an hour; stimulants also, which had been well borne for the last two days, were administered. After the pack her temperature fell to 104°. On the seventeenth day the morning temperature was 105·2°. She was quite conscious, and asked the nurse whether she was to have another bath. She died at 7 15 p.m. on that day without a struggle. Five minutes before her death the thermometer placed in the axilla showed a temperature of 109·8°. Her urine, on the morning of her death, was highly albuminous. Throughout the fever there was little or no active delirium, and the patient had little difficulty in swallowing. Her bowels also were easily controlled, but she had excessive perspirations. On the morning of her death a copious crop of sudamina appeared on the upper part of her chest.

An autopsy was made sixteen hours after death. There was considerable hyperæmia of the membranes of the brain, and a cloudy deposit of lymph existed in the arachnoid membrane at the summit of each cerebral hemisphere. The descending cornua contained soft, stringy clots of blood, and the quantity of cerebro-spinal fluid was excessive. The spinal cord was not examined. The ileum was hyperæmic above, and intensely so

near its termination. The mesenteric glands were greatly enlarged, as were also the solitary glands of the intestines. Peyer's patches were enlarged throughout. They were raised, with firm, hard edges, and sloughs were beginning to form in the lower portion of the ileum. The patches were two inches long in some instances. There was no perforation of the intestines. The spleen was enlarged. The kidneys were apparently quite healthy. The extreme hyperpyrexia in the present instance was evidently of that kind which is occasionally observed in the Continued Fevers, and which appears to be incompatible with life. In the sixty-fifth volume of *The Dublin Journal of Medical Science* (page 151) I recorded a very similar example of high temperature in typhus fever. The thermometer placed in the axilla rose to 109.1° during the death-agony of the patient, a woman, aged thirty-eight years, who succumbed on the nineteenth day of a typhus fever of the nervous or ataxic type. These exceptionally high temperatures in continued fever are to be distinguished from those still more remarkable bursts of hyperpyrexia which are sometimes observed in lesions of the upper portion of the spinal cord, and in certain functional disorders of the nervous system. Strange to say, such extraordinary elevations of temperature do not necessarily or even commonly destroy life, perhaps in consequence of their brief duration.—*March 20, 1880.*

TREATMENT OF INTERTRIGO INFANTILIS.

ACCORDING to Adolf Wertheimber, Munich, fatty matter is found to abound in the cutaneous secretions of the infant. Intertrigo in the vicinity of the anus is often produced by a dyspeptic condition. Equal parts of fresh cow's milk and mucilage of barley, or in the proportion of one of milk and two of the mucilage, sometimes suffice to effect a cure. If the salts excreted are acid, the following should be given three times a day:—R. Cretæ preparat., gr. 1½; bismuthi subnitrat., gr. 3; sacchar. alb., gr. 3; M. Or very small doses of muriatic acid. The child to be washed with soap and warm water and with bran baths. The unbroken skin should be powdered with lycopodium, or with a mixture of equal parts of oxide of zinc and subnitrate of bismuth. The moist parts of the skin are better treated with Hebra's diachylon ointment mixed with olive oil than with zinc or lead ointments. In old cases, a solution of bichloride of mercury (sublimed), 1 in 2,000 of water, should be applied three or four times a day. To complete the cure the diachylon ointment should be had recourse to again.—*Deutsch. Archiv f. klin. Med.*, 1878, XXI., p. 308. Hebra's diachylon plaster is a mixture, freshly prepared at a gentle heat, of equal parts of simple lead plaster and linseed oil spread on linen. Hebra recommends it in local sweating, especially of the feet.—*Lyon Médical*, Jan. 25, 1880.

K. F.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

CLINICAL RECORDS.

CORK-STREET FEVER HOSPITAL, DUBLIN.—*A Case of Exanthematic Fever resembling Epidemic Cerebro-spinal Meningitis.* By J. W. MOORE, M.D., Univ. Dubl.; F.K.Q.C.P.; Physician to the Meath Hospital and to Cork-street (Fever) Hospital, Dublin.

THE patient who forms the subject of this clinical record passed through an illness of such severity, and presenting so many features of interest, that I consider it a duty to publish this account of a very exceptional case:—

Francis M'G., aged fifteen, was admitted to one of the smallpox wards at Cork-street Hospital on the evening of Tuesday, April 27, 1880. He stated that he was a draper's assistant in a very large establishment in Dublin. His illness began about noon on Saturday, April 24. While he was at his work he was suddenly attacked by pain in the small of his back, accompanied with headache and apparently with nausea and vomiting. On the evening of the same day his throat felt very sore. Next morning (Sunday) he went home to Drumcondra, feeling very ill, and becoming worse as the day wore on. He had no appetite, while the headache, pain in the back, and sore throat continued. In the evening he returned to his place of business in town, where he slept; but, feeling no better on Monday morning, he remained in bed until the manager saw him in the course of the day and had him removed to the Adelaide Hospital. The following day (Tuesday) a rash began to appear, which was so suspicious-looking that Dr. Walter G. Smith was sent for to see him in the afternoon. When visited at 5 30 p.m., Dr. Smith found him lying on the sofa, complaining of being very weak. His face was flushed, but there was no eruption on it. On the backs of the hands and forearms were numerous nodules and irregular patches of eruption, pink, readily effaced, and distinctly elevated—at least on the hands. Scattered over the legs were numerous punetiform haemorrhagic patches. A provisional diagnosis of purpuric smallpox was made, so that the patient was sent to Cork-street Hospital, where he was placed, as a case of variola, under the care of my colleague, Dr. R. J. Harvey. For most of the subsequent notes of F. M'G.'s illness I am indebted to our clinical clerk, Mr. John Armstrong,

On Wednesday morning, April 28, the 5th day of disease, Dr. Harvey, at his first visit, recognised so many anomalies in the symptoms that, believing the case was not one of smallpox, he left a message for me to

see the patient. I accordingly did so. His pulse was now 120, the temperature in the axilla was $104\cdot6^{\circ}$; his tongue was thickly furred, and the papillæ were red and enlarged as in scarlatina. The mucous membrane over the fauces, palate, and pharynx was deeply injected, showing here and there patches of whitish exudation. He complained at this time of only slight headache, and of very little pain in the back. There was, however, a decided stiffness of the nape of the neck, with retraction of the head—occasionally jerking of the muscles of the neck and face was noticed. The bowels had remained confined since Monday. A profuse eruption covered the body generally, but especially the back and the posterior aspect of the legs and arms. The eruption was of a deep rose colour, and consisted of more or less elevated maculae. The spots varied in size from very small papules (on the neck) to patches as large as a two-shilling piece, and of irregular outline; they showed a tendency to coalesce—were slightly elevated, at least at the edges, which were whitish, like the wheals in urticaria—and in many cases had a distinct reddish or even purple centre; they were readily effaced by pressure. The patches of eruption were best seen on the back, the extensor aspect of forearms, the elbows and buttocks, and on the inner and front part of each shin was a punctiform haemorrhagic patch.

The eruption was markedly absent from the face, only one small patch on the lower lip above the chin being observed.

The appearance of the eruption, the marked cerebro-spinal symptoms, and the history of the illness, at once recalled to my mind the cases of epidemic cerebro-spinal meningitis which I had seen at the Meath Hospital in 1867, under the care of Drs. Stokes and Hudson. At all events, it was now becoming clear that the patient was not suffering from smallpox, and accordingly he was removed without delay to the non-infectious fever ward in the fever hospital.

Evening.—Temperature 105° , pulse 130. Slight spasmoidic twitchings are noticeable in the lips; at intervals also there is a peculiar jerking of the head, which is slightly retracted. A small irregular subconjunctival ecchymotic patch is observed on the outer side of the right eye. There is no albumen in the urine.

Thursday, April 29th. (6th day). *Morning.*—Temperature $103\cdot6^{\circ}$, pulse 134, respiration 36. It is reported that he slept very badly and was very restless during the night. He still complains of pain in the back of the neck. Eruption is fading slightly, but is less delible on pressure. The cervical muscles are twitching; the external carotid arteries throb visibly; the lips are very much swollen. The patient rambles a good deal, but when roused he speaks perfectly intelligibly. The tongue is covered with a yellowish, creamy fur. He was ordered ten ounces of port wine, and plenty of milk and beef tea. The following mixture was also prescribed:—

R.—Potassii bromidi,		
Potassii iodidi, aa	gr. 80	
Spt. chloroformi,	3 ij.	
Tinct. cinchonæ flavæ,	3 vj.	
Infusi cinchonæ, ad	3 viij.	

M. Ft. mistura.—Signetur : 3 i. tertii horis sumend.

Evening.—Temperature 100·4°, pulse 136, respiration 36. Diarrhoea during the day (seven motions). *Cerebral vomiting*—the matter vomited is of a green colour, and ejected spasmodically and with considerable force; both medicine and wine are vomited as soon as taken. Other symptoms show no improvement. The head is more retracted than in the morning; carotids are throbbing forcibly; the twitching of the cervical muscles continues; the pulse is small, weak, and rapid; the pupils are dilated. There is an anxious expression in the face. The patient passes water freely, and it is found to be free from albumen.

April 30 (7th day). *Morning.*—Temperature 104·4°, pulse 108, respirations 40–66. Restless during the night, tossing and constantly muttering, and trying to get out of bed. Vomiting almost entirely ceased; was able to take wine during last night. The other nervous symptoms unimproved. Rash slowly fading. Medicine not to be repeated.

Evening.—Temperature 103°, pulse 120, respiration 68. No improvement since morning. Extremities cold. Tossing about and delirious during the day.

May 1 (8th day). *Morning.*—Temperature 102·8°, pulse 112, respiration 50. Pulse very weak, and almost impossible to count. He had scarcely any sleep during the night. There is a tetanic spasm in the right foot. He can still, although with difficulty, be roused to give coherent answers. Rash fading. Ordered 2 oz. of brandy, in addition to the port wine.

Evening.—Temperature 100°, pulse 120, respiration 56. Very restless during the day, sometimes getting fits of crying or screaming out loudly. Eyes closed, and he seems to be unable to open them; appears to be suffering much pain; sordes on lips; cannot be roused to answer questions; no vomiting; head markedly retracted.

May 2 (9th day). *Morning.*—Temperature 103°, pulse 120, respiration 50. Shouting and crying continued during the night. Frowning; tetanic twitching increased; head retracted; passes water in the bed; rash fading to a brownish stain, indelible on pressure.

Evening.—Temperature 101·2°, pulse 116, respiration 50. Became rather violent during the day. Takes the wine readily, but it has now to be given carefully as it seems to excite him; great venous congestion, especially in the upper extremities; head not so much retracted, but the twitching of cervical muscles and the throbbing in the carotids continues; a small ecchymotic patch is noticeable above the iris of the left eye;

that on the right eye has almost disappeared; he passes water freely, and has regained power over the bladder.

May 3 (10th day). *Morning*.—Temperature, 103·2°, pulse 116, respiration 52. Sleepless during the night; tongue dry, brown and fissured; sordes on lips and teeth; eyes closed; pulse very small and weak. On drawing the finger sharply across the skin a deep red line is left which persists for some time. This is, no doubt, the "cerebral stain" (*tache cérébrale*). He cannot be roused to talk intelligibly. Rash has now faded to a faint brownish stain. Ordered:—

R.—Tinct. opii,

Tinct. digitalis, ss	3 j.
Spt. ether. nitrosi,	3 ij.
Aq. Camphoræ, ad	3 vj.

M. Ft. mistura.—Signetur: 3 j. secundis horis donec dormiret. Wine, 8 ozs. Brandy to be discontinued.

Evening.—The patient slept well after the second dose of this opiate mixture, so it had not to be given again. No worse than in the morning. Temperature 104°, pulse 124, respiration 48.

May 4 (11th day). *Morning*.—Temperature 101·8°, pulse 118, respiration 40. Ordered wine, 12 ozs.; brandy, 2 ozs. Not any worse; in some respects better; more easily roused; tongue cleaning at the edges; rash fading; *tache cérébrale* not so well marked; venous stasis considerable, though less than at first. Asked for a cup of tea.

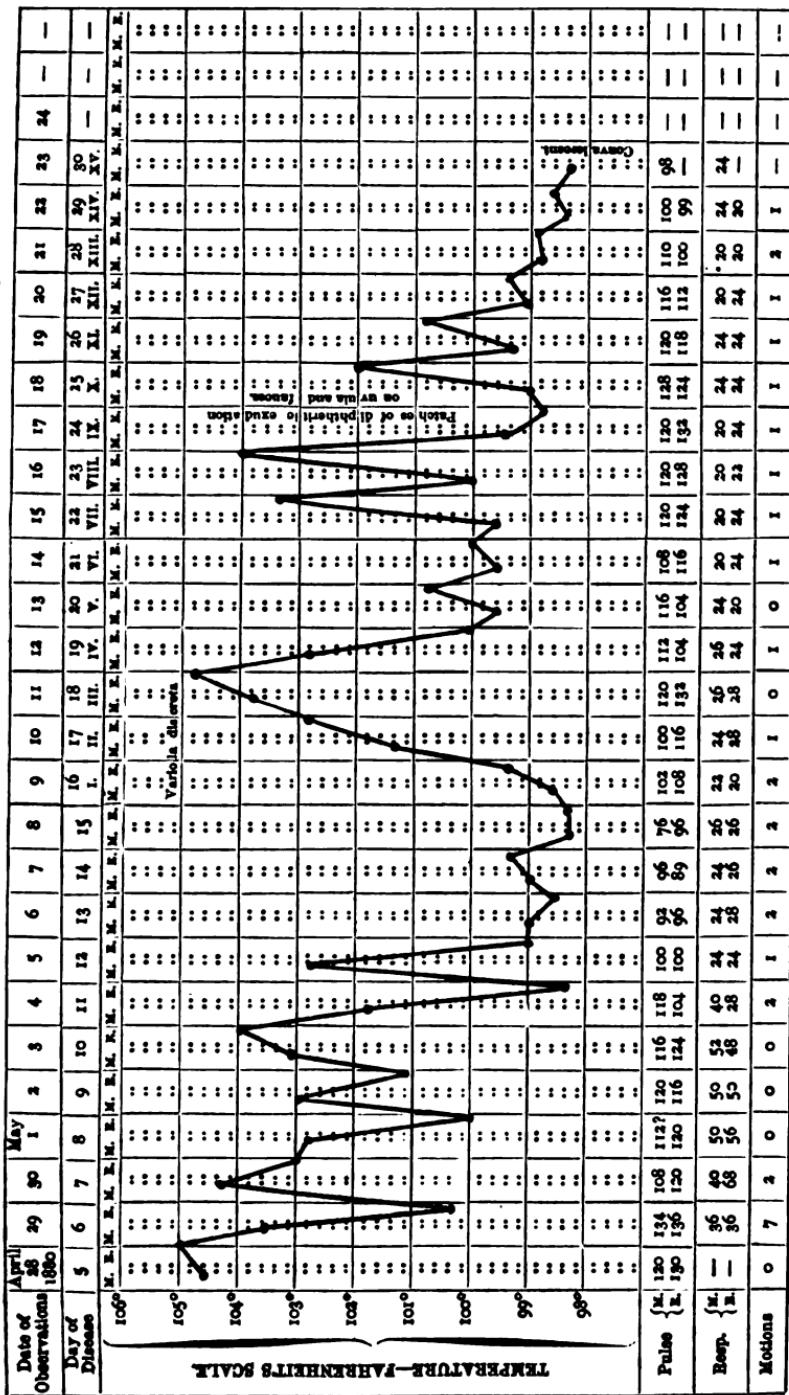
Evening.—Temperature 98·4°, pulse 104, respiration 28. Appears much better. Slept a great deal during the day; talks quite coherently; complains of slight sore throat. Recognised his mother when she came to see him.

May 5. *Morning*.—Temperature 102·8°, pulse 100, respiration 24. Slept well. Still complaining of sore throat; tongue moister than on yesterday; rash replaced by a pinkish stain, but in some parts it has entirely disappeared. Wine reduced to 8 ozs.; brandy stopped.

F. M'G. tells me that the past few days are to him a blank. The last thing he remembers is his being carried from the smallpox wards to the fever hospital.

The patient continued to go on well until the 9th of May—the twelfth day after his admission to the smallpox wards. On the evening of this day the temperature began to rise, reaching 104·8° on the evening of the 11th, when the eruption of variola discreta appeared. The disease ran a favourable course, but the pustules were of an unusually large size. On the 15th and 16th of May the temperature rose again, when the throat became very sore. Patches of diphtheritic exudation now appeared on the fauces and uvula, which was considerably elongated. The throat was much better in a couple of days, and the patient speedily became convalescent. He left hospital quite well on June 18, 1880, fifty-two days after admission.

RECORD OF TEMPERATURE, PULSE, RESPIRATIONS, &c.
Francis McG.; Age, 15; Disease, Cerebro-spinal Meningitis? Result, Recovery.



Appended is the clinical chart of temperature, pulse, respirations, &c., which shows very clearly the course of the three illnesses through which F. M'G. passed so happily unscathed. That the original malady was not smallpox with marked cerebro-spinal symptoms is proved by the occurrence of an undoubted attack of smallpox twelve days after exposure to the contagium of that disease. The question remains—What was the nature of F. M'G.'s illness? The mode of onset—sudden, with pain in the head and back, nausea, and sore throat; the subsequent development of such nervous or ataxic symptoms as retraction of the head, stiffness of the neck, muscular twitchings, throbbing of the carotids, spasmodic vomiting, and the cerebral stain; and, lastly, the peculiarities of the rash—all justify the opinion that the attack was probably one of exanthematic cerebro-spinal meningitis. The characters of the eruption were very similar to those observed by me in three cases of the so-called "epidemic cerebro-spinal meningitis" of 1867, which will be found reported in *The Dublin Quarterly Journal of Medical Science* for August, 1867, Vol. XLIV., page 194, *et seq.*

The eruption in the three cases in question is described as follows:—
Case I. "On the legs and arms were found spots of a dark purple colour and of different sizes; all of them accurately defined and circumscribed, also slightly elevated; perfectly indelible on pressure, and in places covered with tiny papillæ, or even vesicles. The largest of these spots was about the size of a sixpence. They were confined to the extremities, with the exception of one or two small ones on the face and many over the gluteal region. Besides these spots there was noticed on the chest a mottling of the skin, almost passing into the form of petechiæ in places, besides a dusky hue like that of typhus." This patient died on the morning of the seventh day of her illness.

In Case II., "the skin was dusky; on the face were one or two small spots, many on legs and arms. These spots were small, smooth, and *not* raised—though afterwards some became slightly elevated towards their centres. There was no vesicular appearance, as in Case I. Each spot had a well-defined margin; they were indelible on pressure." This patient also died after sixty-four hours' illness.

In Case III., "round the mouth was noticed a complete ring of herpetic vesicles. On the chest two small pustules were seen. On the legs were many of these—some of them just commencing to form, others withering or dried up. Each was surrounded by an inflammatory areola. They closely resembled the rash of varioloida [? variola discreta]. On the arms, especially near the elbows, there were seen large reddish spots, slightly elevated, and with sharply defined margins, the counterparts of the spots in Case I. except in colour, and in their being delible on pressure." This patient made an excellent recovery.

As influencing the prognosis for good in a given case we have to

notice (1) the degree to which the rash is delible on pressure, and (2) the early fading of the spots. In F. M'G. these favourable indications were both present, and—as we have seen—the result was satisfactory.

Lastly, it is not unlikely that an exhausted nervous system was the chief predisposing cause of the diphtheritic attack which occurred as a complication on the seventh day of discrete smallpox.

CYSTOTOMY FOR CYSTITIS IN THE MALE.

At the recent annual meeting of the American Medical Association, held at New York, Dr. Robert F. Weir, of New York, read a paper on the above subject, which embodied the results of forty-seven cases in which the operation of cystotomy for cystitis had been resorted to. Of the 47 cases collected by Dr. Weir 13 died, 10 of which deaths were due to advanced kidney diseases, and only 3 to the operation itself. Of the 34 cases that recovered, 23 were cured by the operation absolutely, or were so much relieved as to be able to return to their vocations, to hold their urine for several hours; 7 were relieved to a moderate extent, and 4 completely failed in affording any benefit. Not all, however, were treated by lateral lithotomy—in only 32 cases was this method used, the bilateral incision five times, and the median ten times. When the median section was resorted to, in six of which a cure resulted, either a supplementary incision (three times) into the prostate was done, or the finger (once) or two fingers (once) were introduced into the bladder, or by a bivalved speculum the vesical orifice was stretched (five times) to the diameter of an inch. Hence, when the median operation was resorted to, incision or laceration of the prostate was of necessity conjoined with it. A permanent fistula was more apt to occur after the median operation. To afford success, not only a free opening into the bladder, preferably by the lateral incision, must be made, but also the wound should be kept open as long as possible by either introducing the finger or a large tube frequently during the first ten days after the operation, and after that time oftentimes a tube can be permanently borne. Dr. Weir also cited a number of cases where, in the performance of lithotomy or cystotomy, the hypertrophied median lobe or other portion of the prostate, had been removed without enhancing the risk of the operation, and advised, after consideration of the subject, that an endeavour should, if possible, be made in the performance of cystotomy in the aged (or past fifty-five) to remove any enlargement of this gland.—*N. Y. Med. Record*, June 5, 1880.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks ending Saturday June 19, 1880.

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin,	314,666	746	949	54	30	56	6	35	39	9	39·2
Belfast,	182,082	560	457	—	5	2	1	23	6	8	32·6
Cork,	91,965	218	217	—	—	14	1	5	10	8	30·7
Limerick,	44,209	97	74	—	—	—	—	—	6	2	21·8
Derry,	30,884	79	49	—	1	—	—	7	1	—	20·6
Waterford,	30,626	55	72	—	—	3	—	—	—	1	30·6
Galway,	19,692	34	36	—	—	—	—	—	4	1	25·1
Sligo,	17,285	45	36	—	—	—	—	—	1	5	27·1

Remarks.

An excessive death-rate continued throughout the period in Dublin. In Belfast, Cork, and Waterford also the mortality was very high; in Sligo and Galway it was high; but in Limerick and Derry it was moderate. The average annual death-rate per 1,000 represented by the deaths registered in the sixteen principal town districts of Ireland during the four weeks was 31·4; whereas that in twenty large English towns (including London, in which it was as low as 18·4) was only 19·4. In Edinburgh the mortality was at the rate of 21·8 per 1,000 annually; in Glasgow it was 22·9. Omitting the deaths (37) of persons admitted into public institutions from localities outside the district, the death-rate in the Dublin registration district was 37·7 per 1,000 per annum, while it was as high as 40·6 within the municipal boundary. From the foregoing figures it appears that *the death-rate in Dublin was more than double that in London*. This inordinate mortality was largely due to the prevalence and fatality of zymotic affections, to which class of diseases 265 out of the 949 deaths registered were attributed—that is, 27·9 per cent. Scarletina, smallpox, fever, whooping-cough, and measles were all prevalent and fatal. The deaths from smallpox (54) were higher than they

have been in any period of four weeks since that ending March 22, 1879, when they were 62. Of the 39 deaths from fever, 17 were ascribed to typhus, 20 to typhoid or enteric, and 2 to "simple continued" fever. The deaths from zymotic diseases were more than double the average of the previous ten years—namely, 265, compared with 125·7. As regards the other Irish towns, we note that whooping-cough was fatal in Belfast and Derry, scarlatina in Cork, and that there were 4 deaths from fever in Galway. Diseases of the organs of respiration caused 155 deaths in Dublin, the ten years' average being 110·7 in the corresponding period. The deaths included 106 from bronchitis (average=76·9) and 37 from pneumonia (average=21·8). On Saturday, June 19, the number of cases of the different epidemic diseases under treatment in the principal Dublin hospitals were—of smallpox 165 (or exactly twice as many as were in hospital on Saturday, May 22, and nearly three times as many as were under treatment on Saturday, April 24), of measles 59, of scarlatina 58, of typhus 35, of enteric fever 12, and of pneumonia 15.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks ending Saturday, July 17, 1880.

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin,	314,666	946	771	53	28	44	2	29	28	9	31·9
Belfast,	182,082	488	357	—	8	2	1	19	14	16	25·5
Cork,	91,965	191	210	—	—	17	4	4	13	4	29·7
Limerick,	44,209	97	62	—	—	—	—	—	—	3	18·2
Derry,	30,884	79	76	—	—	1	—	10	1	—	32·0
Waterford,	30,626	60	47	—	—	2	—	—	—	1	20·0
Galway,	19,692	32	27	—	—	—	—	—	1	—	17·8
Sligo,	17,285	30	20	—	—	1	—	—	—	2	15·0

Remarks.

In Londonderry, Dublin, and Cork the rate of mortality was unsatisfactorily high; in Belfast it was high; in the remaining towns it was moderate or low. The average annual death-rate per 1,000 represented by the deaths registered in the sixteen principal town districts of Ireland was 26·9, whereas that in twenty large English towns, including London

(in which the rate was only 19·0), was 19·1. In Glasgow the rate was 20·7, and in Edinburgh it was 19·8. Very different was the return for Dublin—namely, 31·9 per 1,000, or—omitting the deaths (31) of persons admitted into public institutions from localities outside the registration district—30·5 per 1,000. Within the municipal boundary of Dublin the death-rate so corrected was 34·0 per 1,000. Zymotic affections were again more than ordinarily fatal in the Irish metropolis—the deaths caused by them numbered 220, compared with an average of 118·8 in the corresponding period of the preceding ten years. Smallpox and scarlatina were particularly fatal, and measles, whooping-cough, and fever each caused about one death per diem. Of the 28 deaths attributed to fever, 11 were returned as due to typhus, 11 to enteric, and no less than 6 to so-called "simple continued fever." Scarlatina was fatal in Cork, and whooping-cough in Belfast and Londonderry. Except in Belfast the summer increase of the fatality of diarrhoea is not noticed. This is due to the prevalence of heavy showers and absence of extreme heat. In London the increasing mortality from diarrhoea with the advancing season is well shown—the weekly number of deaths being 32, 64, 98, and 165 respectively. In Dublin the deaths from diseases of the respiratory organs were 112, against an average of 83·4 deaths in ten years. They included 78 deaths from bronchitis (average = 59·8) and 23 from pneumonia (average = 14·3). At the close of the period on Saturday, July 17, the number of cases of epidemic disease under treatment in the principal Dublin hospitals were—smallpox 104, measles 18, scarlatina 57, typhus 29, typhoid 12, and pneumonia 9.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of June, 1880.

Mean Height of Barometer,	-	-	-	29·949 inches.
Maximal Height of Barometer (on 1st at 9 p.m.),	-	30·356	"	
Minimal Height of Barometer (on 20th at 6 p.m.),	-	29·520	"	
Mean Dry-bulb Temperature,	-	-	-	56·7°
Mean Wet-bulb Temperature,	-	-	-	53·2°
Mean Dew-point Temperature,	-	-	-	50·0°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	·361	inch.	
Mean Humidity,	-	-	-	78·7 per cent.
Highest Temperature in Shade (on 29th),	-	-	-	69·2°
Lowest Temperature in Shade (on 5th),	-	-	-	40·8°
Lowest Temperature on Grass (Radiation) (on 11th),	-	36·2°		
Mean Amount of Cloud,	-	-	-	68·0 per cent.
Rainfall (on 18 days),	-	-	-	2·166 inches.
General Directions of Wind,	-	-	-	E. & W. by N.

Remarks.

In most respects June was a favourable month, of average mean temperature, the rainfall and number of rainy days being somewhat in excess of the average. In Dublin there was no extreme heat, and although the air was warm by day and night during the latter half of the month, the thermometer never reached 70° in the shade. In the first fortnight some very cold nights occurred—on the 5th the sheltered thermometer fell to 40·8°. At 9 a.m. of the 8th temperature was as low as 42·7°, and a cold rain was falling. In the afternoon much hail fell, accompanied with thunder to the south of the city. Next day the loftier of the Wicklow mountains, including Djouce and Kippure, were capped with snow. On this day a severe thunderstorm passed to N.W. of Dublin, but in the city only a few drops of rain fell. From the 12th to the 18th fine, dry, and often bright weather prevailed throughout Ireland. On the 19th, however, an unsettled, showery, thundery period set in. The nights were usually mild and summerlike, but in the daytime there were clouded skies and frequent showers. On the 21st lightning was seen at night over the sea. On the 22nd distant thunder was heard, and at 11 30 p.m. a bright lunar rainbow became visible. Between noon and 1 p.m. of the 23rd a heavy thunderstorm prevailed to N. and N.E. of Dublin, and at 1 30 p.m. torrents of rain fell in the western districts of the city, accompanied with thunder and lightning. From the 25th to the close of the month the weather was not so unsettled, although showers continued very prevalent at intervals. Hail fell on the 7th and 8th. Thunder was heard on the 8th, 9th, 22nd, and 23rd. There was a vapour fog on the morning of the 21st. Brilliant rainbows were seen on the 22nd. The rainfall in Dublin in the six months ending June 30, 1880, amounted to 11·118 inches, and was distributed over 88 days.

COD-LIVER OIL AND IODOFORM.

DR. FONSSAGRIVES, having ascertained that the addition of iodoform and essence of anise effectually masks the repulsive taste of cod-liver oil, always employs this combination in cases where the union of iodine with cod-liver oil is indicated, iodine being conveyed into the economy in a larger proportion by means of iodoform than by any other preparation. Patients, after comparing this mode of taking cod-liver oil with the ordinary modes, unanimously declare in favour of the taste and smell of the former. To one hundred grammes (nearly three ounces) of the oil a quarter of a gramme (about four grains) of iodoform and ten drops of the aniseed are added.—*Prog. Méd. and Med. Times and Gaz.*, July 2, 1880.

THE BOSTON
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PRESERVATION

PERISCOPE.

Edited by G. F. DUPPEY, M.D., F.K.Q.C.P.

ON THE COMBINATIONS OF BRIGHT'S DISEASES.

THE view that each case of Bright's disease belongs to some distinct class has recently been called in question by Weigert, Senator, and others, who have shown that many cases do not correspond to the typical schema of any of the simple forms. Dr. Bull in a long paper treats of those cases which he considers not as transitional forms, but as combinations of two or more of the simple forms. He examines first the combination of atrophy with amyloid degeneration. He holds that in these cases the atrophy is always primary, and that the so-called third or atrophic stage of the amyloid kidney does not exist. Against Weigert he urges that the existence of interstitial processes in tumefied amyloid kidneys is no proof that these would subsequently advance to atrophy; and in common with Billroth he maintains that questions connected with Bright's disease cannot be altogether decided by considerations of pathological anatomy. He also doubts the conclusiveness of the cases of contracted amyloid kidneys in which the glomeruli are not atrophic, and thinks that in these a proof of primary amyloid degeneration with secondary atrophy cannot be found. The author next studies the combination of granular atrophy with parenchymatous nephritis. He discusses the statement of Mahomed that pure granular atrophy is unaccompanied by albuminuria or other clinical symptoms of Bright's disease, and that when these occur their presence is always due to a combination with parenchymatous nephritis. He does not agree with the extreme views of Mahomed, but points out the important fact which follows from the observation of Mahomed confirmed by his own—namely, that pure granular atrophy exists without being diagnosed, and that even in very young subjects to a degree which is far from being suspected. The cases recorded by Leube, Moxon, Rooke, and Dukes, and many others, in which albuminuria was found in apparently healthy persons, were probably instances of commencing granular atrophy. Now, if it were established that all these albuminurias hitherto overlooked are really the sign of commencing renal atrophy, this fact would be of great importance in the question of the combinations of Bright's disease in so far that the existence of secondary atrophy would become very doubtful, not only in amyloid disease, but even in parenchymatous nephritis. Later experience has confirmed the author in the view which he put forward many years ago, that those cases usually considered as parenchymatous nephritis with secondary atrophy are

really examples of combinations of primary atrophy with secondary parenchymatous nephritis of varying intensity. The statement of Senator that in primary renal atrophy the hypertrophy of the heart is not eccentric is not confirmed, nor are the recent views of Bamberger, who would reduce all forms of Bright's disease to one. In the triple combination of renal atrophy, amyloid degeneration, and parenchymatous nephritis, the atrophy is always the first link in the chain, the amyloid degeneration is generally the second, but may in rare cases, of which the author cites one, be preceded by parenchymatous nephritis. Lastly, the combination of amyloid kidney and parenchymatous nephritis is considered. Mere fatty degeneration of epithelium is no proof of parenchymatous nephritis, but may be due simply to want of oxygen caused by the narrowing of the diseased blood-vessels. Fatty degeneration due to nephritis differs from this simple fatty change by the invariable coexistence of interstitial cellular infiltration. The author thinks that the distinction of stages in amyloid kidney must be totally abandoned. Amyloid degeneration may, although rarely, be combined with acute haemorrhagic nephritis, but is very frequently combined with chronic parenchymatous nephritis. The amyloid disease is most commonly primary, but the opposite order is sometimes followed, or both conditions may run a parallel course. In many cases it is difficult to determine with certainty the order of events. The possibility of the amyloid degeneration being caused by the albuminuria is admitted, although such a causation cannot as yet be considered as proved. Some rules for diagnosis are given, but the author admits that so far a certainty of what combination is present is not always, or even often, attainable during life. Retinitis never occurs in uncomplicated amyloid degeneration. In uncombined forms of disease uræmia occurs only in parenchymatous nephritis. It may occur in all combinations, most commonly in that of atrophy with nephritis, and certainly much more commonly here than in pure parenchymatous nephritis. It is rare in atrophy with amyloid degeneration, and very uncommon in amyloid degeneration combined with nephritis.—*Nordiskt medicinskt Arkiv.* Elfte Bandet, Häftet 3, 4.

J. M. P.

THE USE OF HYDROBROMIC ETHER IN LABOUR.

In some instances in labour both ether and chloroform will produce, in certain females, so much relaxation that, if there is the slightest tendency to haemorrhage, it will be very much increased. To test the influence of hydrobromic ether, Dr. Turnbull, of Philadelphia, administered it, February 24, 1880, to Mrs. R. T. P—, aged thirty, a lady with a narrow pelvic outlet and very rigid os uteri, who had been in labour with her fourth child for nine hours, having made but little progress. The hydrobromic ether was used in tablespoonful quantities, when the pains

were most intense and distressing, and gave as prompt relief as ether, and yet it did not interfere in the least with the expulsive efforts. Her pulse was only increased six beats; no apparent disturbance of her respiration, only a feeling of fulness in the chest. The baby (a female) was born full of life and vigour, and cried lustily. There was a slight laceration of the perinæum, as the occiput was pressed strongly upon the tissues. The patient had not a bad symptom from the use of this form of anaesthetic, and there was no sickness of the stomach. The whole quantity employed was five tablespoonfuls. There was no haemorrhage, and the placenta was expelled with but slight traction. This, he believes, is the first time of this agent having been employed for this purpose.—*Independent Practitioner.*

S. W.

GLYCERINE IN FLATULENCE, ACIDITY, AND PYROSIS.

DRS. SYDNEY RINGER and MURRELL have largely employed glycerine in the above conditions, and found it very useful. In some cases it removes pain and vomiting. They suggest that it acts by retarding or preventing some forms of fermentation and of putrefaction. That glycerine does act in this manner has been previously shown by several observers. Glycerine, however, does not prevent the digestive action of pepsin and hydrochloric acid; hence, whilst it prevents the formation of wind and acidity, probably by checking fermentation, it in no way hinders digestion. A drachm to two drachms is administered either before, with, or immediately after food. It may be given in water, coffee, tea, or lemon and soda water. In tea and coffee it may replace sugar, a substance which greatly favours flatulence, as indeed does tea in many cases. In some instances a cure does not occur till the lapse of ten days or a fortnight.—*Lancet*, July 3, 1880.

GENERAL EXANTHEMA CAUSED BY CALOMEL.

ENGELMANN (*Berl. klin. Woch.*, 1879, No. 43) reports the case of a man, forty-two years of age, who took three doses of calomel of 15 centigr. ($2\frac{1}{2}$ grains) each, in the afternoon. Two hours afterwards his face became dry and swollen, and the skin red. These phenomena rapidly spread all over the body. The following day the patient presented the appearance of a person suffering from serious erysipelas—the face swollen, the eyelids could with difficulty only be opened, the skin was of a brilliant red colour, the conjunctiva injected, the tongue white; while the entire buccal and pharyngeal mucous membrane presented an intense red colour. This extraordinary redness of the skin extended all over the cutaneous surface, but was more marked on the parts exposed to the light. The axillary temperature was 40° C. (104° F.), and the pulse 120. The patient complained of weakness, anorexia, and of a sensation

of burning and pricking all over the body. The physician in attendance, much puzzled by these strange phenomena, was aided in the diagnosis by the patient himself. He must have taken some mercury, he said, in the white powder; and he explained that he was extremely susceptible to the action of mercury. On two former occasions he had experienced the same symptoms—once after having taken some mercurial pills; a second time after having spent the evening with some friends who had amused themselves by burning “Pharaoh’s serpents.” The affection got well, spontaneously, in eight days. There was desquamation of the cutis.—*Gaz. Hebdom.*, 19 Mars., 1880.

NOVEL TREATMENT OF RHEUMATIC FEVER.

BASED apparently on the success claimed to have been obtained by the treatment adopted in two imperfectly reported cases of rheumatic fever, Dr. Crowther, of the General Hospital, Hobart Town, recommends hot baths containing washing soda as almost a specific remedy in this disease. The patient is to be placed in a bath, as hot as can be comfortably borne, to which half a pound of common washing soda is added. After remaining ten or fifteen minutes in the bath the patient is then lifted into a warm, dry blanket, and replaced in bed. Profuse diaphoretic action follows, along with diuresis, to the almost immediate relief of the patient; pains rapidly leaving affected joints, and sleep following. Not a single bad symptom, it is stated, has ever taken place during or after this bath.—*The Australian Med. Jour.* April, 1880.

THE DIGESTIVE ACTION OF ANIMAL TISSUES BY PAPAIÑE.

IN August of last year a communication was brought before the French Academy of Sciences by MM. Würtz and Bouchut, giving the result of their discoveries on the sap extracted from a palm tree in South America, the *Papaya carica*. They concluded that the sap or juice must contain a digestive ferment analogous to that secreted by the carnivorous plants, as milk, fibrin, &c., were digested by it in larger quantity than by pepsin secreted by the stomach; it also shows this advantage over pepsin, that it dissolves proteids, not only in the presence of a small quantity of acid, but in a neutral medium, and even in one slightly alkaline. Since then M. Bouchut has conducted a series of experiments to test the digestive power of papaine on living animal tissues. He injected 10 and 20-per cent. solutions of this substance into the brain, muscles, &c., of animals. The parts contiguous to the injections became softened, pulpy, and gelatinous. He then tried it in the case of pathological tumours—first in three cases of adenoma of the neck. The effects of the injections were in the course of a couple of hours very painful, and they provoked a violent febrile attack. At the end of three days the glandular swellings were softened and converted into abscesses, which were opened with a

knife and cured. At the Hospital St. Louis (Paris), in three cases of cancer of the breast, injections of papaine resulted in the softening and digestion of the hard masses of disease. The fluid products, drawn off by an aspirator, from one of these cancers which was as large as a fist, were examined at the laboratory of the Faculté de Médecine, and appeared to be veritable peptone.—*Revue Médicale.*

S. W.

THE USEFULNESS OF HOT WATER IN SURGERY.

In connexion with the details of an operation for the removal of a large myxo-sarcomatous tumour of the superior maxilla, in which the flaps and cavity left by the operation were freely sponged with hot water, Dr. Neilson calls attention to the rapidly-accumulating facts relative to the usefulness of this agent in surgery. By *hot* water is not meant a temperature of 70°–90°, but so hot the hand can scarcely be borne in it. The application thus made is simply magical (Dr. Neilson says) in stopping oozing; and anyone who has seen the beautiful cleanliness of a large flap, and has noted the delicate pink lymph covering the same, subsequent to a *hot* cleansing, would never desire to return to cold water.—*Amer. Jour. Med. Sci.*, April.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

A Stand with Pelvis for Demonstrating the Mechanism of Labour.

By H. MACNAUGHTON JONES, M.D., F.R.C.S.I. & Ed.; Professor in the Queen's University, Ireland.

In demonstrating to a class the various stages and the relative positions of the foetal skull in passing through the pelvis, I contend that it is best for the student to learn with the articulated pelvis, and that he should be always made to follow the movements in the pelvis, first watching his teacher and then working out the process—the deviations from the natural, difficulties in transit, and the object of interferences—for himself. The double act of imagination, as regards the usual obstetric position, in this country and the axis of the child is of course the beginner's "pons." "It involves," as Leishman truly observes, "a somewhat complex mental process." We have to allow for the posture of the woman, lying as she does horizontally, or with the long axis of her body at right angles to that of the accoucheur. Remembering my own early difficulties, I had constructed for my class for demonstration and for individual use in study the stand figured below. It is light and portable, metallic, hollow, with a sliding rod which moves up and down, and the height of which can be regulated by the screw (a). Fig. 1 (from a photograph) shows

the pelvis, lying on the left side, in the usual obstetrical position. By a turn of the screw (*a*) the pelvis can be made to revolve in the stand, and view of the inlet or outlet presented to the class. By turning the screw (*b*) the pelvis can be turned in the dorsal position, and the inlet or

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.



THE POSTERIOR
SOCIETY FOR
MEDICAL
OBSERVATION

outlet presented, as before. Fig. 5 shows the practical advantage which this plan possesses. There is nothing to interfere with the view of a large class; the position of the head in its different stages can be easily seen, and, by simply rotating the pelvis, the base of the cranium or vertex can be equally well shown. The coccyx should be so articulated as to be movable, and a pelvis with an artificial perineum would add to the value, if any there is in my plan.

Fig. 5.



Messrs. Mayer and Weltiger are at present making for me an improved stand, and adding an artificial perineum to this pelvis, with movable coccyx.

ERRATUM.

In the review on "Recent Works on the Urine," in the number of the Journal for July, page 45, line 8 from the top, the words "nickel prism" are a very obvious misprint for "Nicol prism."

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SEPTEMBER 1, 1880.

PART I.
ORIGINAL COMMUNICATIONS.

ART. V.—*Salicin, Salicylic Acid, and Salicylate of Soda in Rheumatic Fever.** By CHARLES GROVE YOUNG, M.D., M.Ch., Univ. Dub.

WHEN one considers the various ways of treating rheumatic fever, almost every practitioner having some peculiar method of his own, and, no matter how different the actions of the medicines employed, still successful results obtained—some having good results from the “alkaline treatment,” others from the “acid treatment,” and, more remarkable still, other cases getting well without any treatment at all—one is inclined to believe that one remedy is as good as another against this disease.

In old times general blood-letting—and with good results—was largely employed in rheumatic fever; now it is seldom, if ever, heard of. Cures have been made by injecting carbolic acid subcutaneously; and in the St. Frances Hospital, New York, cases have been successfully treated by packing the patient in blankets wrung out of a weak solution of this acid.

A case is reported in *The British Medical Journal* for the 1st Feb., 1871, as having been cured by hypodermic injections of morphia, and some practitioners have got equally good results from the internal administration of ergot of rye. Since Dr. Maclagan

* A Thesis read for the degree of Doctor of Medicine in the University of Dublin, June, 1880.

introduced to the notice of the medical profession the favourable results which followed the administration of salicin in rheumatic fever, notices of a number of cases of this disease, treated with salicin, salicylic acid, and salicylate of soda, have from time to time appeared in the different medical periodicals. Such opposite treatment makes one very timid in discussing this new method of cure, but so much has been written within the past few years on these preparations that it is only fair to the gentlemen who have taken the trouble to publish their experiences of their value to inquire if we can legitimately come to the conclusion that a remedy has been found that can be depended on as an aid in the treatment of this disease—a disease which must be admitted by every one to be most painful in its onset and progress, and most dangerous in the results that may follow from it.

If the researches of Ranke and others are to be depended on, salicin, when introduced into the blood directly or by the stomach, is changed into salicylic acid; and if, according to Binz, salicylate of soda is decomposed by the carbonic acid in the tissues and blood, and salicylic acid set free, we need not make a distinction between cases treated with these preparations.

Salicylic acid and its salts are, no doubt, antiseptic in their action, but whether the acid or its salts have the greater antiseptic power is still a matter of some doubt. Kölbe, who first introduced it into practice, considered that salicylic acid possessed antiseptic properties of which its salts are devoid. J. Müller thought the acid more powerful than carbolic acid in preventing putrefaction and fermentation, and in stopping the action of inorganised ferments. With this end in view, it was used by Wagner in fermentative disease of the stomach and intestines. Senator's opinion was that salicin and salicylic acid are equally good as reducers of temperature in febrile conditions; he has used them in parametritis, enteric fever, and phthisis pulmonalis. Dr. Riess, of Berlin, also speaks favourably of these preparations as reducers of abnormal temperature. Fourteen cases of rheumatic fever, treated by Dr. Stricker, were relieved within forty-eight hours not only of their high temperature, but also of the pain, redness, and swelling.

A case of rheumatic fever was treated in the German Hospital by Dr. Weber with salicylic acid, fifteen grains being given every two to four hours; after the sixth dose the temperature was reduced from 101° to 98° with apparent convalescence. The remedy having been changed in favour of quinine and iron during three days, a

relapse occurred, which quickly subsided when the salicylic acid was again resorted to. In a case of enteric fever, treated by Dr. Cavafy, published in *The Lancet* for November 4th, 1876, thirty grains of salicylate of soda, given in one dose, reduced the temperature from 103·8° to 100·8°—that is, 3°; the second dose was followed by vomiting, cold extremities, and a weak pulse; eight hours after the temperature was reduced to 96·9°. The medicine being withheld, the evening temperature rose to 103·6°—a rise of nearly 7°. During this time there was neither diarrhoea nor haemorrhage. When the salicylate of soda was given, this patient had been ill twenty-six days, and during the greater part of this time the temperature was as high as 104°.

In *The Lancet* and *British Medical Journal* for 1876 are published twenty-six cases of rheumatic fever that had been brought to a successful issue by these preparations—viz., salicin, salicylic acid, and salicylate of soda, but this number does not include the successful cases published by Dr. Maclagan.

There is nothing remarkable about the ages of these cases, as they vary from twelve to thirty-two years, the greater number being between twenty and thirty years. The highest temperature ranged from 100·1° to 104·5°; in only one of these cases did it get so high as 104·5°. The history of this case is given so vaguely that one is unable to draw any certain conclusion from it, except that the patient was an able-bodied man; his temperature was reduced in three days to 99° by ten grains of salicylic acid every two hours; he had no heart complication; his pulse fell steadily from 92 to 78. The treatment was commenced on the second day of the attack, and convalescence began in three days. A pulse of 92, with a temperature of 104·5°, is something remarkable.

In two cases only did the temperature rise as high as 104°. One was that of a young man twenty-two years of age; there was no cardiac complication; he had been ill two days before he came under treatment; eighteen grains of the acid every two hours reduced the temperature to normal in four days. The other case of this high temperature was that of a young woman of the same age. It was her second attack, and she had been ill ten days before she came under treatment. She had a systolic bruit—whether due to the previous attack or not is not stated; her temperature was reduced to the normal in three days by fifteen grains of the acid every two hours. In none of these three cases was there a relapse. These three cases speak well for the treatment, for in none of the

eight reported by Dr. MacLagan, and treated in the same way, did the temperature reach 104°. In the case of Dr. Cavafy, referred to above, the temperature was only 103·8°. The temperature in no case fell lower than 97·8°.

The temperature of the remainder of these twenty-six cases was not remarkable, and from studying their history we may, for the sake of convenience, divide them into two classes:—

1. Uncomplicated; and 2. Complicated.

In the first class the patients were suffering from the rheumatic fever for the first time—almost all of them were seen early in the attack; in some, treatment of various kinds was tried, but the majority of the patients were put on the salicylic treatment at once, in doses varying from ten to twenty grains every one, two, or three hours; they were relieved of their pain and swelling in from thirty-six hours to six days. Convalescence did not exceed twenty-two days, except in one case, in which the patient was not seen until he had been three weeks ill of the fever, and notwithstanding this he was relieved of the pain and swelling of his joints in three days, though he was not discharged cured for four weeks. In some cases the patients got well in a much shorter time—as early as eleven days from the commencement of the fever. On the whole, in these uncomplicated cases, the period of time ill before the patient was put on the salicylic treatment does not appear to protract the period of convalescence, except in this one instance. Relapse occurred in only two cases.

In the second class—the complications being murmurs in the region of the heart, principally systolic—the patients were suffering from their second, and in some cases from their third, or even fourth, attack. It is more than probable that some of these complications were the remains of former attacks of rheumatic fever. It is very improbable that a person could have such repeated attacks without the heart suffering to some extent; and it is very hard—in a given case of rheumatic fever that has lasted for some time before it comes under observation, and has become, as it were, chronic, where a murmur has been developed at the first onset—to say that such a murmur was recent or due to some previous attack, unless the patient himself can throw some light on the matter. Be that as it may, they were all relieved of the pain and swelling in as short a time as in those cases that were not complicated by these murmurs, when they were put under the influence of salicylic acid or its compounds, with one exception; but the convalescence was

protracted for a longer period—four weeks or more. A man aged thirty-two years, three days ill in his fourth attack before remedies were applied, was under the treatment three weeks, and his convalescence was prolonged to six weeks. It is rather difficult to say, in cases where the patients have suffered from previous attacks, and where the time under treatment is prolonged, as in this case, whether this tedious convalescence is due to the number of previous attacks or to the number of days ill before the patient comes under treatment, or whether to the idiosyncrasy of the patient, or to a combination of all these; but there is no doubt that these complicated cases were longer getting well than those that were uncomplicated. The duration of the period preceding observation cannot have much influence as a retarding agent, for some of the cases got well quickly, even when the patients had been in the fever some weeks before the treatment had commenced, while others, when the treatment dated from the second or third day, had a tedious recovery. In only one case among these successful cases is it stated that a mitral murmur was developed during the treatment, and in this instance the treatment was continued for nine days, the patient taking thirty grains of the acid every two hours, the dose being increased as the illness progressed. From this one case we cannot draw a general conclusion that recent murmurs have any influence on this treatment. Nor indeed can we say that cardiac complications are prevented by this treatment, this being the only case of these twenty-six successful ones in which it was noted that a murmur was developed under treatment, all these cases being particularly free from those complications that usually attend rheumatic fever. However, we shall see more on this subject when we come to study other cases which were not so fortunate in their results, although treated in the same way.

It is the commonly received opinion of medical men that salicylic acid and its salts have no direct influence on the heart, but that, by cutting the fever short, they do not give the heart time to become involved.

In a case of rheumatic fever following scarlatina, salicylate of soda had a good effect. The case was that of a little girl, seven years of age—a weak, delicate child, of slight build, pale, and anaemic—who had just passed through a mild attack of scarlatina, from which she was convalescent about a week. From the commencement of the scarlatina she complained of vague pains all over her body, but could not tell exactly where at first; but while

desquamation was going on (which was principally on the thighs and hands), the pain appeared to settle in her limbs, but without swelling. As the desquamation passed off, the pain settled in the joints; at one time one would be attacked, at another time another, the child each day gradually getting worse, and at the end of a week swelling commenced, and she had again to take to bed, just four weeks from the first appearance of the scarlatina. There was no albumen in the urine at any time before or after the scarlatina. Her mother was a large, fat woman, and had rheumatic fever four times, the small joints being principally affected; in her first attack she had been laid up nine weeks. The patient's brother had rheumatic fever once. This was her condition the first day she came under observation suffering from this complaint. The child is very pale; complains of pain in feet, ankles, hips, right wrist, hand, and fingers, which are red and painful, and all the joints, except the hip, swollen—even the small joints of right hand, and toes of both feet, but no pain in knees or shoulders; the heart sounds normal; respiration clear; tongue with a thick white fur on a light red base; urine abundant, and leaves a white deposit on cooling. This patient was put on salicylate of soda, and made a good recovery in eleven days. The treatment commenced on the third day. The quantity of the salicylate of soda taken every twenty-four hours was—third day, $7\frac{1}{2}$ grains; fourth day, $7\frac{1}{2}$ grains; fifth day, 30 grains; sixth day, 45 grains; eighth day, 25 grains; tenth day, 15 grains. She had no relapse.

As this patient took only 130 grains of the salicylate of soda in eight days, being on an average $16\frac{1}{4}$ grains per diem, we might ask ourselves the question—What influence has such a small dose on the disease? Would this little girl have got well in as short a time without any treatment at all, except keeping her in bed? If the cure of this case was due to the salicylate of soda, such a large dose as that recommended by Dr. MacLagan must be unnecessary. He says:—"I give salicin to adults in a dose of from twenty to thirty grains every two hours; in very acute cases I give that quantity every hour until pain is relieved"—that is, at the rate of from 100 to 150 grains every day, supposing the patient to be awake ten hours out of the twenty-four—rather under than over the mark; or in a very bad case, if the pain was not relieved for some hours, they would take a large quantity of the drug, and none of the successful cases referred to got such large doses as this. In Dr. Weber's cases, fifteen grains every two to four hours was

found to be sufficient. It is very hard to say what might have been the result if this child had been put on larger doses, and at shorter intervals. No doubt a large dose at the beginning might have cut short the complaint advantageously to the patient as it would have prevented the pain and discomfort of eleven days of the disease, but this is only problematical. I have often seen patients who were complaining of pains in their joints after severe wettings—such patients as one would say to, "Well, you are in for an attack of rheumatism"—get rid of their pains by taking fifteen grains of salicylate of soda at bed-time. But I have never seen a patient in undoubted rheumatic fever get rid of his pains by one heroic dose of any of these preparations under consideration.

The clinical chart showed that there was a gradual, but not uniform, fall in the temperature, pulse, and respiration, from the third day of the disease—the first of the treatment—to the tenth day. The temperature in this case was not very remarkable, the highest being 102·6°, and it fell to 97·6° on the eighth day. The heart's action was very rapid, but regular, rising to 160 beats per minute; there was neither endo- nor peri-carditis. The respiration was clear throughout, but very rapid, the rate being nearly double what it was when the child was in good health.

If we had only these successful cases to deal with, we might naturally come to the conclusion that a very useful remedy, not to say "specific," had been found for rheumatic fever; but, as has been stated before, the successful cases were almost all free from cardiac complications, and in not one case did acute pericarditis manifest itself. Could this have been due to the remedy? Unfortunately we find published in the same periodicals other cases that show quite a different result from these—cases in which this mode of treatment was carefully tried, in some pushed so far that symptoms of poisoning by the drug manifested themselves; and although some of these patients died, others were brought round by other modes of treatment.

The ages in these unfortunate cases were between seventeen and thirty years. From their temperature when brought under treatment, the number of days ill before treatment commenced, whether in their first attack or in their second, the dose of the drug given when compared with the successful cases, one would have been inclined to give a favourable prognosis. One patient, six days ill before he came under this treatment—the highest temperature being 103°—took 800 grains of salicylic acid in five days, without

getting rid of the pain of the fever, lowering the temperature, or preventing pericarditis, which supervened on the twelfth day, after which he made a tedious recovery. Another patient, in his second attack of rheumatic fever, took 510 grains of salicin in forty-eight hours. This treatment was continued, with few intermissions, for nine days. On the tenth day he had symptoms of pericarditis; on the twelfth, pleurisy. The temperature was not lowered, or the pain relieved. The patient recovered on other treatment in forty-nine days. In both these instances the drug was pushed so far that it could not be borne any longer. In every way the medicine got a fair trial and failed.

In a third case the medicine taken was as much as from thirty to sixty grains per day for six days, when pericarditis came on, and the treatment having been changed, the patient came round in eight weeks. It is only fair to state that this patient was ill ten weeks before he came under treatment.

Enough of the medicine, in all conscience, was given in these three cases, and still it did not keep off the heart complication; and not only did it not prevent pericarditis, but it appeared to have no effect on the fever—the temperature not being very high—either in lowering the temperature or in relieving the pain. The medicine was not of much use in these three cases as a controller of the fever, if it is true that heart complications are kept off by the fever being cut short. One of these patients had been ill ten weeks before he was put on this treatment—a period quite long enough for pericarditis to manifest itself in; and among the successful cases some of the patients had been weeks ill before this treatment was commenced.

The first of these cases that proved unsuccessful was only six days ill prior to treatment, and 160 grains of the salicylic acid per day did not keep off pericarditis—a far greater quantity than that given to any of the patients who were cured by its means. The other patient had 255 grains per day without doing any good. In none of these three cases was the temperature over 103°.

In another instance, notwithstanding twenty grains of the salicin every two hours for eight days, the temperature rose from 102° to 110°; the temperature was reduced by the bath to 101°, but eventually the patient died. In St. Thomas's Hospital a patient whose temperature rose to 107° when treated with alicylate of soda, had his temperature lowered by the cold bath, the soda salicylate having had no effect.

A man twenty-seven years of age, two days ill before he came under treatment, took fifteen grains of the drug every three hours; on the seventh day of the disease, the fifth of the treatment, the dose was increased to twenty-five grains every three hours; on the eighth day of the disease, the sixth of the treatment, the temperature rose to 105·8°, when he died. Immediately after death the temperature was found to be 107·1°. It should be observed that this patient had old curvature of the spine. On the fourth day there were symptoms of pericarditis, and on the sixth pneumonia set in. This is by no means a fair case to take as an illustration of the good or bad effects of the salicylates in rheumatic fever, as there were so many serious complications, the patient also not being in good health previously.

From what we have seen from these cases, can we agree with Dr. Maclagan when he says, in speaking of the effects of salicin in cardiac complications in rheumatic fever, "that given sufficiently early, and in sufficient dose, salicin prevents these complications?"

The effects of these preparations on these patients were not the same. They all bore the drug very well at first, but after it had been continued for some time, with some it disagreed, bringing on vomiting, noises in the ears, accompanied with deafness. Others had no bad effects from them from first to last.

Dr. Tackwell has published two cases from the Radcliff Infirmary, Oxford, in which very peculiar symptoms showed themselves after the use of salicylic acid, besides the noises in the ears and deafness. "A peculiar loud, deep, sighing respiration; a strange restlessness, gradually increasing to delirium, not unlike that of *delirium tremens*, with involuntary evacuation of urine and faeces; a slow, labouring pulse." The urine had a green colour. No sooner was the medicine withdrawn than the strange symptoms disappeared. The dose was twenty grains of the acid every three hours. Some have observed axillary abscess follow the use of salicylate of soda.

I think that we can legitimately, from these cases, draw the following conclusions:—Salicin, salicylic acid, and salicylate of soda are useful preparations in some cases of rheumatic fever. Cases in which they appear to do most general good are those that have no tendency to heart complications, the temperature not being high, and the patient being in his first attack. Such patients are relieved of the pain and swelling in from thirty-six hours to six days, and convalescence is completed in from ten to twenty-five days;

and the length of time ill prior to treatment does not influence the treatment. Patients that have suffered from previous attacks, when murmurs in the region of the heart are left, are benefited by these preparations, as far as their recent symptoms are concerned, and in as short a time as those in their first attack, but their convalescence is more tedious. These preparations are useless, either as relievers of pain or as reducers of temperature, in cases which are complicated with pericarditis, even when the temperature is not high; nor does their early administration, and in large doses, keep off this complication. They also appear to be of no use in cases that have a temperature higher than 104·5°. Contrary to the conclusion come to by Dr. MacLagan, the large doses recommended by him are not necessary—ten to fifteen grains every one, two, or three hours being sufficient. And in cases where these drugs do not seem to suit, the most commonly observed symptoms are noises in the ears, accompanied with deafness and vomiting.

ART. VI.—Some Clinical Observations on Two Cases of Hæmophilia. By W. H. T. WINTER, L.K.Q.C.P.I.; House Surgeon to the South Staffordshire Hospital.

WHEN the Venetian barber pricked his nose and bled to death, he little thought that the disease of which he was the victim would baffle the researches of the physician for over three centuries, and prove one of the greatest enigmas of medicine.

This paper is written as an addition to existing statistics, rather than as an exposition of any fresh view of this awful malady.

The two cases I have to relate were under the care of Mr. Newnham, and I am indebted to him for allowing me to publish them:—

CASE I.—James S., a boy of twelve years of age, was admitted on 15th November, 1879. He had a fractured femur complicated by an old contraction of the knee-joint on the injured side. There was a considerable effusion of blood at the seat of the injury, and there existed an amount of pallor and shock disproportionate to the nature of the accident. Owing to the shape of the limb, we had to put up the fracture on a well-padded angular splint. In a month the fracture had firmly united without the formation of much callus, and it was thought advisable to try gentle extension. The limb was, in the course of a week, brought from a right angle to an obtuse angle, when a sudden and rapid effusion took place into the knee-joint. It was accompanied by considerable pain, and

was coincident with an attack of epistaxis. Extension was discontinued; suppuration took place into the joint; the skin thinned, as over a chronic abscess; an opening was formed by nature, and a large collection of blood-stained pus was let out. Convalescence was more rapid than was anticipated. The boy grew fatter about the face, and regained some colour. The wound into the knee-joint healed, and extension was again employed. By April the boy had a fairly straight limb.

From time to time the patient had an attack of epistaxis, which yielded temporarily to the perchloride of iron spray. If he cut himself or even received a scratch, he would have a prolonged attack of haemorrhage—the blood coming with a slowness and persistency that I have since learned is characteristic of the disease. Iron, tannic acid, cold, and alum were only of temporary service. Pressure, applied with the greatest caution, caused superficial sloughing, and rest and the elevated position seemed the only means of arresting haemorrhage for any considerable time. Internally drugs were useless, although small doses of sulphate of iron with sulphate of magnesia each morning seemed to improve the child's condition, and increase the periods between the haemorrhages. As regards diet, the boy was allowed the most generous food and a small quantity of port wine at his dinner.

On 20th May, 1880, the patient was discharged in excellent health, having had no bleeding from the end of January. He had lost his bluish waxy complexion, and looked fat and rosy, and was able to get about on crutches.

Five weeks later I heard that the boy was lying ill at home, so I told his relations to bring him to the hospital. He had been well up to 9th June, and had till then suffered from no haemorrhage since he left the hospital. On the 10th, when getting out of bed, the patient noticed there was a swelling of his left thigh—the side opposite the fracture. By mid-day the swelling had increased considerably. There was great pain, and the child was compelled to keep to his bed.

On the 24th June the child was admitted. He was profoundly anaemic. There was great emaciation of the lower extremities, and to a lesser degree of the rest of the body. He looked waxy and flabby. The tongue was white and soft, and the gums anaemic, and his appetite was bad; he had a bitter taste in his mouth; his bowels were not regularly open, and the smallest quantity of solid food made him sick.

The left thigh was considerably swollen, and the skin discoloured. The middle third felt hard and brawny, but there was no oedema. There was considerable pain in the part, which prevented the patient going to sleep.

After the irritability of the stomach had been allayed by bismuth and soda, the appetite was improved by mineral acids and vegetable bitters. He was kept in bed, and the greatest care taken by the nurse to prevent

bed-sores. As his health improved, the blood tumour on his thigh gradually shrank, and the skin over it became shrunken and desquamated. He was placed in the ambulance on sunny days, and wheeled about the grounds, and before he had been here three weeks he was able to get about on a wheeled chair.

Latterly Mr. Newnham has ordered hamamelis, but we have had no results which would justify us in giving an opinion of the value of the drug in hæmophilia.

I have, so far, not mentioned the history of the patient's family. He is one of nine children—six boys and three girls. The girls are robust and large for their age. They have never suffered from any illnesses except those of infancy. The youngest boy, a baby in arms, has not had any manifestation of hæmophilia. The other five were healthy till they were about six years of age. They then bled after the slightest injuries, the haemorrhages being stopped only by nature—any attempt at pressure being followed by blood blisters and sloughing. Four or five times a year they have an attack of epistaxis, when a knee or an elbow becomes painful and swollen and they have to lie up for a time in bed. The eldest brother (aged eighteen) has recently had pain and swelling of the wrists. The doctors tell them that they suffer from "rheumatism."

Mrs. S., the boy's mother, is a spare and florid woman. She has no tendency to bleed, and enjoys good health. She had no sisters, but she had two brothers; one died at two years of age from cholera; the other from about six or seven years of age had hæmophilia, and died from an injury to the shoulder at the age of twenty-three. Suppuration took place in the injured part; the abscess was opened; he bled obstinately, and died in a week or two.

The mother of Mrs. S. was healthy, and so were her maternal aunts. She had a maternal uncle who was the subject of the haemorrhagic diathesis; he died before he arrived at the marital age. There is no history of tubercle, gout, or syphilis.

On the patient's father's side there is a tendency to rheumatism. His father's family die comparatively early, while if his mother's relations live beyond twenty-five they attain an advanced age.

CASE II.—The second case I have to relate is that of Henry A., a strong, well-built young man of twenty-one. On the 2nd July, 1880, he crushed his great toe in a threshing machine, and in Mr. Newnham's absence I amputated. I had no notion that he was the victim of this terrible diathesis.

After the operation the little bleeding there was was arrested by cold, and the wound dressed after Guerin's method. The temperature that night was 99°, and no anxiety was felt about the result.

On 3rd July, on visiting the patient in the morning, I was struck

with the forcible pulsation of the carotids. The pulse was 140, full and compressible; the temperature 100°; and the foot looked inflamed. A purge was ordered. At mid-day the patient was again seen, and, as his condition had not improved, the dressing was removed. There was a clot in the wound, and there was a tendency to bleed, but the haemorrhage was so slight that it seemed hardly to demand special attention. The evening temperature was 100·6°.

On the 4th the temperature was 102·8°, and the superficial vessels were seen to pulsate with painful distinctness, and there was a bruit in the veins of the neck. The pulse was 150. The dressings, on being removed, were somewhat soiled. The wound was laid open and the clots turned out, but there was no bleeding vessel to be discovered. The whole wound oozed with a scarcely perceptible slowness. After wiping it, it first looked sticky, then moist. In a moment or two a drop formed, grew larger, and rolled off the wound. I then found out that the patient was subject to the haemorrhagic diathesis.

He told me that some months previously he had been kicked in the face by a horse, and that there was obstinate bleeding from the wound. He had, at intervals, had attacks of epistaxis. He had a brother who had been a bleeder till he was eighteen, but after that age he had not suffered from profuse haemorrhages after injury. Another brother, too, had a tendency to epistaxis.

The limb was raised and cold applied, but the bleeding was not stopped. It oozed drop by drop. Then powdered alum was tried, and afterwards tannic acid, but with no permanent success. The evening temperature was 103·8°, and evening pulse 140. The carotids pulsated violently. The patient was put on a mixture of tr. digitalis m 5 and tr. ferri perchloridi m 30 every four hours, and a hypodermic of morphia was administered.

5th July.—Morning temperature, 101°; haemorrhage stopped by tr. ferri perchlor. applied locally; evening temperature, 100°.

6th.—Bleeding from wound from 3 to 5 a.m.; morning temperature, 101°; evening temperature, 103°.

7th.—Morning temperature, 103·6°; evening temperature, 102·2°. Tenderness along the left external saphena vein.

8th.—Morning temperature, 102°; evening temperature, 103·8°; pulse, 116. Pain along left saphena; sloughing of wound. Patient was put on quinine and iron.

9th.—Morning and evening temperature, 103°; morning pulse, 170. Tr. aconiti m j. every hour. Evening pulse, 150.

10th.—Morning temperature, 102°; evening temperature, 103°.

11th.—Morning temperature, 101°; evening temperature, 102·8°.

12th.—Morning temperature, 100°; evening temperature, 101·4°. The slough separated.

13th.—Morning temperature, 100°·8°; evening temperature, 104°.

14th.—Morning temperature, 100°; evening temperature, 102°·8°. The wound was covered with oedematous granulations. The pulse was 140, dicrotous. R.—Tr. digitalis, m v.; tr. aconiti, m ij.; ammon. carb., gr. 3; sextis horis.

15th.—Morning temperature, 100°; evening temperature, 102°·8°. The pulse had steadied. It was noticed that there was a subcutaneous collection of pus along the inner side of the right leg.

16th.—Morning temperature, 100°; evening temperature, 102°·4°.

17th.—Morning temperature, 100°; evening temperature, 105°. The collection of pus was let out by a puncture, and a fine drainage tube introduced.

18th.—Morning temperature, 103°; evening temperature, 105°. A collection of pus formed over the lumbar vertebræ.

19th.—Morning temperature, 103°·5°; evening temperature, 105°. Potassa fusa was applied over the back, and an eschar as big as a shilling was made.

20th.—At 2 a.m. the patient vomited some yellowish, inodorous, pultaceous matter. At 6 he had a rigor, and his temperature was 103°. At 8 his temperature was 99°, his breathing was distressed, and it was found that an effusion of pus had taken place into the knee-joint. His complexion was yellow and waxy. He seemed improved at mid-day. He slept for some hours after dinner, and on awaking tried to speak but was unable. In a few moments he was dead.

A post mortem was made forty-eight hours after death by Dr. Mortimer. Rigor mortis was present, and there was some hypostasis. The right knee contained some thin sero-pus. The wound of the toe was covered with flabby granulations, and no pellicle had formed at the edges. The abscess cavity on the side of the right leg had shrunk up. There was an eschar on the back, which had begun to separate from the healthy tissues. In this situation there was some pus. Old adhesions were found on the surface of the right lung. Both lungs were healthy. The pericardium contained a slight excess of blood-stained fluid. The heart was pale and hypertrophied. There were large and firm fibrinous clots on the left side. The foramen ovale was closed. All the viscera, with the exception of the spleen, were pale. The spleen was gelatinous in appearance and pulpy to the feel; it weighed 12 oz.

These two cases have been related from notes taken at the time. Since then I have read Prof. Immerman's exhaustive article on "Hæmophilia." I have not thought fit, however, to alter anything I have already stated, as observation, unfettered by a knowledge of the literature of the subject, has a definite value, provided the basis of observation is not ignorance.

I have drawn the following conclusions from Prof. Immerman's paper, and have supplemented them by my own experience :—

Hæmophilia may be defined as a tendency to persistent idiopathic and traumatic hæmorrhages. The diathesis is generally hereditary, and in the vast majority of cases is transmitted through the mother. Parents connected with bleeding families are generally prolific ; they have nine or ten children, as compared with the average of ordinary marriages, which is five. Male hæmophilists rarely procreate, as they generally die before the marital age ; but when they live and marry healthy women, they usually do not transmit the diathesis. In children of the same families the disease occurs 4·7 times more frequently in the sons than in the daughters. The diathesis generally lasts throughout life.*

The Anglo-German and Jewish races are more liable to the diathesis than other races.

The first appearance of the disease is generally in early childhood. In the S. family it first showed itself in five individuals, between the ages of five and six ; and in the A. family in two boys somewhat earlier. The third son has occasionally excessive bleedings, but can hardly be classed as a hæmophilist.

Disposition to bleed, says Grandidier, is specially marked at the second dentition, at puberty, and—in females—at the first appearance and at the cessation of the menses.

Any traumatic lesion in a bleeder may excite a characteristic bleeding. The danger from the same kind of wound is not equally great at all times ; it may be greater at certain critical periods of the patient's life and at the changes of the seasons.

A traumatic hæmorrhage aggravates temporarily the manifestations of an already developed diathesis. I have seen many instances of this in James S. For instance, Jan. 19th, 20th, 21st and 22nd, hæmorrhage from cut of thumb ; Jan. 23rd, epistaxis ; 24th, hæmorrhage into knee ; 25th, epistaxis.

In the table of 308 cases, drawn from Grandidier's statistics, hæmorrhage from the nose occurred 152, from the gums 38, and from the intestines 35 times ; hæmoptysis 17 ; hæmaturia 16 ; and hæmatemesis 14 times. The rest of the hæmorrhages took place from the genitals, tongue, ear, &c.

The hæmorrhage in these cases is capillary. Its danger is more

* Thomas A., aged twenty-two, the brother of Henry A., bled habitually till he was eighteen. He has not bled excessively since then, although he has wounded himself more than once.

due to its duration than to its profuseness. Bleeders bear great losses of blood well, and the loss is soon repaired.

The blood, it seems, contains an unusually large quantity of fibrin and red blood-cells, and therefore the habitual condition is rather that of plethora than that of anaemia.—(Ziemssen, Vol. XVII., p. 45.)

The superficial vessels are more numerous than natural. The superficial arteries are abnormally wide, while the aorta, pulmonary artery, and their branches are abnormally narrow. There is an excessive thinness of the coats of the arteries, and the inner coat has been found undergoing fatty degenerations, as in anaemia and chlorosis.

The heart is often hypertrophied. When this condition exists it affects the left ventricle more often than the whole organ.

The most frequent complications of hæmophilia are neuralgia, rheumatism, and joint affections.

For further information on the disease I would refer the reader to Vol. XVII. of Ziemssen's "Encyclopædia," and to Dr. Wickham Legg's "Treatise on Hæmophilia."

In many recorded cases operative interference has terminated fatally in bleeders. Circumcision and division of the frænum linguae have caused death, and the opening of abscesses has had disastrous results. Dr. Hunt has related to me the case of a gentleman who underwent lithotomy, and who was the subject of the hæmorrhagic diathesis. He died a short time after the operation.

In nearly all these cases there was no pre-knowledge of the existence of the diathesis; and, after my own experience, I would earnestly entreat the profession to make some inquiries with regard to hæmophilia before using the knife.

In both the patients whose cases I have related all the hæmorrhages were of the same type; and so much have I been impressed by it that I am led to believe that the method of bleeding which I have described is pathognomonic of the disease.

To one other point I would call the attention of the profession. Are not the high temperatures which follow attacks of hæmorrhage due to septic poisoning? As far as I have seen, interstitial hæmorrhages are not followed by such high temperatures as bleeding on free surfaces, and the temperature does not rise till time has been allowed for the products of hæmorrhage to putrefy.

ART. VII.—*Note on Apnæa and Heat Dyspnæa.* By R. JOHN ANDERSON, Demonstrator of Anatomy, Queen's College, Belfast.

DURING the Winter Session, 1879–80, a paper was read by me at the Ulster Medical Society, entitled “Respiratory Excitation and Depression.”* Some points of importance bearing on the history, nature, and cause of apnæa and heat dyspnæa have since come to my knowledge, and I shall here briefly state them.

APNÆA.

As far back as 1858 Professor Brown-Séquard showed that pressure on the head of an animal affected the character of the respirations. The respirations are slowed by pressure upon the head. Subsequently the same physiologist found that injection of carbonic acid, nitrogen, and other gases with force into the laryngeal side of a tracheal opening produced apnæa; the same phenomenon appeared, but in a less degree, when the injection was made into the pulmonary side. The result of the experiments was doubted by Filehne, but his mistake arose from the fact that he did not carry out the details of the experiments.

Some experiments that have a very important bearing upon the cause of apnæa were made by Professor Brown-Séquard a considerable time ago; and during last winter and the present summer not only have the results been confirmed, but many important facts have been added thereto. The experiments were made principally on dogs and rabbits.

If a dog be fixed in the usual position on Bernard's dog-board, the trachea opened, and a canula introduced for the purposes of artificial respiration if necessary, but more especially with the object of obtaining the respiratory tracings on a rotating cylinder, and the head be pressed upon, the respirations immediately change in character—in fact, they become slower. If, however, the head be bent strongly forwards, complete cessation of the respirations as a rule results—in other cases, when a prolongation of the pause is observed, in a greater or less degree. The season of the year seems to have some influence on the result; for with rabbits, in the winter apnæa was much more prolonged than in the summer months. Division of the pneumogastric nerves does not affect the comparative results. When, however, the cerebrum is removed,

* See Transactions of the Ulster Medical Society in this number of the Journal, page 269.

no apnœa is produced by flexion of the head. When the lateral half of the medulla is divided the apnœa is less marked than when that structure is entire. It thus follows that the tension of the medulla oblongata produced by the forcible flexion of the head is the cause of the apnœa.

It has been stated by some that the veins contain red blood in apnœa, but the colour of the blood varies according to the conditions under which apnœa is produced. In the experiments performed in the College of France the blood of the veins was distinctly redder, approaching the colour of arterial blood. Another fact of interest is that the temperature of the rectum is lowered by depression of the head.

In experiments of this kind it is of the utmost importance that the trachea tube should be quite free, that no structures be injured which will produce convulsions or affect the character of the respirations unless in such a way as may be desired. The asphyxia superinduced by accidents of this kind will necessarily affect the result, but this occurs so rarely with care that it is sufficient to mention it.*

HEAT DYSPNœA.

A paper appeared in the September (1879) number of the *Journal of Physiology* which contains some important facts with reference to heat dyspnœa. It is there shown that the experiments of Goldstein and Ackermann, though accurate, are susceptible of an explanation very different from that given by these observers. Dr. Sihler points out that the method of warming the blood adopted by Goldstein and Ackermann is imperfect, that the bath introduced into the wound increases the number of the respirations when the carotid is tied, and that hot water brought into contact with wounds in the thighs increases the frequency of the respirations. The same observer has found that section of the spinal cord at the lower part of the neck diminishes the power of heat in producing an increase in the number of the respirations, and enables artificial respiration to produce apnœa when the blood is heated. He concludes that warmed blood and skin stimulation are factors, the latter the more important, in the production of heat dyspnœa. The same observer regards the venosity of the blood as the sole or principal cause of the action of the nerve centres.

* Paper read before the Société de Biologie, July 3, 1880. Archives of Scientific and Practical Medicine, p. 87. Prolongation extraordinaire des principaux actes de la vie après la cessation de la respiration. Archives de Physiologie. 1878.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Diseases of the Throat and Nose. By MORELL MACKENZIE, M.D., Lond.; Senior Physician to the Hospital for Diseases of the Throat and Chest; Lecturer on Diseases of the Throat at the London Hospital Medical College, &c. Vol. I.—*Diseases of the Pharynx, Larynx, and Trachea.* London: J. and A. Churchill. 1880. 8vo. Pp. 601.

WE have long felt the want of a thoroughly practical and systematic treatise on diseases of the throat and nasal passages. Admirable essays and papers have from time to time appeared which have dealt with the various affections occurring in the nasopharyngeal and laryngeal organs, but up to the present no standard English work, embracing in detail all the diseases of these parts, has been written by any British laryngoscopist. The work on "Diseases of the Throat" by Mr. Lennox Browne, while succinct in the practical rules for treatment, lacked the completeness, in some respects, which a standard work of reference should present when consulted in cases of emergency by the practitioner—not that we mean in the least to deprecate Mr. Lennox Browne's treatise, the illustrations of diseased states which abound in it giving it a peculiar value in the eyes of general practitioners, and also to students, as an assistance in recognising the various morbid appearances occurring in the larynx. Yet anyone familiar with laryngoscopic work must at once appreciate the valuable addition now made to this special department in the work before us. The entire work, of which only the first volume has as yet appeared, will include the consideration of affections of the pharynx, larynx, trachea, oesophagus, nasal cavities, and neck. The matter now presented complete for the first time is the result of the author's large and unrivalled experience both in hospital and private practice, extending over a period of twenty years. His constant labour in this special field, and the accurate methods adopted at the Throat Hospital for recording every fea-

of moment in the history and treatment of the cases there attending—the systematic registration of which must have struck any visitor—give to this final compilation of Dr. Mackenzie a tenfold value. Indeed it is only a just and reasonable tribute to say of him, that to his voluntary teaching and perfect demonstrations at the Golden Square clinique many of those who practise with the aid of the laryngoscope in the United Kingdom owe the knowledge which they possess of this instrument; and if they have not there learned their first lessons, they have received many invaluable and useful hints, and acquired enlarged experience through the affability and kindness of the author. We can barely venture to do more than glance over the plan and scope of the first volume. Rightly the author has avoided one of the common mistakes of many modern writers. He wisely determined to avoid filling up of many pages of his work with notes of cases and voluminous records. It must have been a great temptation to him, with the vast mass of evidence at his command, to draw here and there on the particulars of a case of unusual importance to illustrate his views. Now, nothing is more wearying to a reader than the repeated and multiplied records, including minute details of symptoms and treatment, with which the pages of some works are filled—often, too, when these records present but little variety. It would be well that the author's example were more frequently followed, and such notes "only introduced where they were required for the illustration of a difficult subject, or where the cases themselves were exceptionally rare." The first volume is subdivided into three sections. Prefacing each there is a short anatomical sketch of the part treated of; next follows a description of the various methods of examination and the instruments useful in diagnosis and treatment; and, lastly, a systematic grouping of the diseases affecting the part, and the practical rules for their diagnosis, prognosis, and treatment. Section I. is devoted to the pharynx. Having considered the more frequently occurring catarrhal states, the author enters fully into the symptoms and pathology of granular pharyngitis. Having reviewed the predisposing causes, Dr. Mackenzie remarks that "the most potent of all the exciting causes of granular pharyngitis is over-exertion of the voice;" hence its frequent occurrence in professional persons, clergymen, singers, &c. Exposure to cold, it may be, is the immediate origin of this most troublesome affection, which gradually, if not heeded, culminates in a total inability to use the voice—a result in part due

to the accompanying hoarseness and in part to the want of power to speak or read aloud for any time. The fatigue felt on a slight exertion of the voice is typical of this annoying condition. Dr. Mackenzie reports two forms—the hypertrophic and exudative. The elevated follicles, the irregularly scattered and raised patches of mucous membrane, with the accompanying congestion of the fauces and the distended veins, with more or less of nasal dryness, and, perhaps, nasal catarrh—all are characteristic of the hypertrophic variety. The exudative form Dr. Mackenzie rather associates with follicular tonsillitis and those troublesome caseous deposits so familiar in obstinate cases of this affection. This cheesy secretion, with the dotted appearance imparted by the collections of white substance in the scattered follicles, though rare, yet is occasionally met with, and the obstinacy with which it resists treatment is well known. Dr. Mackenzie regards, with Stoerk, the pathological deviation in the exudative variety as principally follicular, not epithelial, as in the instance of the hypertrophic affection—the tubules being the seat of the change in the former, the epithelium in the latter.

He gives special directions for the application of the London paste (T.H.P.) to the granulations, and speaks highly of the results of the application in his hands. This plan, combined with the use of chloride of zinc (3 j.—3 j.), we can, of our own experience, speak most favourably of. In the exudative form the white collections are scraped away with a small scoop, and then nitrate of silver is applied. Of course it is necessary to combine constitutional treatment in all cases, and to combat any diathetical tendency that may be present. Putrid sore throat and its relation to blood poisoning is carefully considered, also herpes of the pharynx, and the danger of confounding this comparatively mild disease with diphtheria is pointed out. The safe rule, we believe, in all these cases of ambiguous ulceration attended by the appearance of membranous patches and vesicles, more particularly when "sore throat" or so-called *croup* appears to be epidemic, is to treat the case as diphtheritic, and deal with it as such according to the severity of the symptoms—an error in this direction, as the author remarks, being least likely to lead to any evil results. It would appear, according to the table of 1,176 cases treated at the Throat Hospital, that tonsillitis is more prevalent in the autumn months than during any other period of the year. It may seem hardly conceivable that with care an attack of quinsy would be confounded with diphtheria. Yet there can be no question that such errors do arise from want of careful examination

of the secretion. More difficult is the diagnosis of the subsequent paralysis which follows severe attacks of tonsillitis, where there undoubtedly has been no diphtheritic taint. Fortunately, as the author states, these palsies are rare after quinsy; yet we have seen well-marked instances in which there could be no doubt of their occurrence. Guaiacum, which has yielded such excellent results in our hands, both locally and internally, the author speaks most highly of; yet all practitioners must feel that after a certain stage of the disease has passed, and the tonsil is threatened with suppuration, most topical applications do more harm than good. Rational principles demand promotion of the suppurative action, and evacuation of the pus as the only satisfactory treatment. In his remarks on the treatment of syphilis of the pharynx, in the admirable chapter on this affection, the author adheres to the principles laid down in his preface in regard to the administration of mercury in syphilis, and adopts the views of Professor Sigmund—viz., "That specific anti-syphilitic treatment is only required when serious constitutional symptoms are present," and that such treatment in the early stages does not ward off the later manifestation of the disease. There can be no doubt that the conditions inherent in the individual himself do influence the pathological changes in syphilis; but we are not prepared to accept the foregoing aphorism in its entirety in regard to the preventive measures of a specific nature which the eminent authority quoted has laid down. On the contrary, we are inclined to believe that the beneficial influence of judiciously administered specifics, and more particularly a mercurial course, is nowhere more manifest than in affections of the throat and nasopharyngeal tract. Nor do we consider it to be a question for the predilection of the surgeon whether in a given case of chancre of the tonsil he will adopt, or abstain from exhibiting, a specific course of treatment, satisfying himself with emollient gargles and local treatment. We believe that experience shows that mercurial treatment in some form is essential for the satisfactory cure of such cases. As a local remedy, whether to the tongue or tonsil, there is undoubtedly nothing to compare to the acid nitrate of mercury if the ulceration be extending. The section on the pharynx concludes with chapters on Foreign Bodies, Neuroses, Aphthæ, Diphtheria, and Erysipelas. The author devotes over sixty pages to the consideration of diphtheria. We have before referred to his essay on this subject, recently published, and with slight alteration in it the matter is here reproduced—the identity of croup and diphtheria being strongly

advocated. There is no more valuable portion of Dr. Mackenzie's work than this, and we would recommend all practitioners to study it carefully, and to realise the value of tracheotomy, when performed early, in this disease. There is no disputing the figures adduced, the last statistics showing that a successful result was obtained (Krönlein) in 30 per cent. of the cases operated on in 567 instances, and by careful selections of cases from private practice. Dr. Soles Cohen has collected 167 cases of tracheotomy in croup with 110 recoveries. Even allowing that the successful result is only brought about in one out of every six or eight cases operated on, we quite agree with Dr. Mackenzie that the operation "is not only justifiable, but that it is a positive duty." There can be little doubt that with many the operation of tracheotomy has fallen into disrepute, from the combined causes of a bungling and timid operator and an imbecile delay in operating, to which may be added want of proper care in the after-treatment, and the neglect of those precautions which are indispensable to the complete success of this operation.

The larynx and its diseases have, as might be anticipated, a large share of attention, 300 pages being devoted to them. There is a valuable description of laryngeal instruments and the best methods of practising laryngoscopy. The author then discusses the various forms of laryngitis, non-malignant and malignant growths, syphilis and laryngeal phthisis, and the neuroses of the larynx, completing the section by a chapter on spasm of the glottis. This division of the book is especially rich in new matter, now laid before the profession for the first time. Besides numerous cuts of the different instruments of use in the diagnosis and treatment of laryngeal growths, there are nearly fifty engravings of morbid states, malignant and benign growths, paralysis of the muscles of the larynx, and syphilitic growths, &c.

Directions for practising tracheoscopy, the manipulation of tracheal instruments, follow a description of the surgical anatomy of the trachea. The same plan is adopted as in the section on the larynx. Inflammatory states are first considered, and then the etiology, symptoms, and treatment of morbid growths, the section concluding with some invaluable hints on the mode of performing tracheotomy, and the after-treatment.

Lastly, there is an appendix, in which we find a number of most useful formulæ for the various topical remedies in use in the treatment of throat affections. It has been impossible in this very short

sketch to do much more than merely draw attention to this work by Dr. Mackenzie. All who wish to acquire a knowledge of modern laryngoscopy must study this treatise for themselves. It adds another to the list of standard works on special subjects which have of late years appeared from the hands of men who, by enormous experience in these special branches, are peculiarly well fitted to assume the part of leaders and reliable teachers to their less favoured brethren.

The book is beautifully put out of hands, as indeed are all those printed by the eminent firm who have published it, and is clearly printed in good legible type; it is pleasant to read, not too bulky, and is furnished with a detailed index.

There can be but one verdict of the profession on this manual—it stands without any competitor in British medical literature as a standard work on the organs it professes to treat of.

H. M. J.

RECENT WORKS ON THE MEDICAL PROFESSION.

1. *The Medical Profession; being the Essay to which was awarded the First Carmichael Prize of £200 in 1879.* By WALTER RIVINGTON, B.A., M.B., &c. Dublin: Fannin & Co. 1879. Pp. 477.
2. *The Medical Profession in the Three Kingdoms in 1879; the Essay to which was awarded the Carmichael Prize of £100.* By THOMAS LAFFAN, Physician to the Cashel Union and Fever Hospitals. Dublin: Fannin & Co. 1879. Pp. 218.
3. *Medical Education and Medical Organisation; being the Oration delivered before the Hunterian Society on the 12th of February, 1879.* By WALTER RIVINGTON, B.A. & M.S., Lond. London: Baillière, Tindall, & Cox. 1879.
4. *The Medical Act (1858) Amendment Bill and Medical Reform.* By W. E. STEAVENSON, M.B., Cantab., &c. Same Publisher. 1880.
5. *The General Medical Council: whom it Represents, and how it should be Reconstructed.* By ARCHIBALD HAMILTON JACOB, M.D., Univ. Dub. Same Publisher. 1880.

6. *Special Report from the Select Committee on the Medical Act (1858) Amendment (No. 3) Bill [Lords], together with the Proceedings of the Committee, Minutes of Evidence, and Appendix.* Ordered by the House of Commons to be printed, 29th July, 1879.
7. *Special Report from the Select Committee on the Medical Act (1858) Amendment (No. 3) Bill, together with the Proceedings of the Committee, Minutes of Evidence, and Appendix.* Ordered by the House of Commons to be printed, 12th March, 1880.
8. *Medical Education and Practice in all parts of the World.* By HERBERT JUNIUS HARDWICKE, M.D., &c. London: Churchill. 1880.

THE books, pamphlets, and reports whose titles are above set forth may be considered as typical of the unsatisfactory state of the body politic of the medical profession, and the tinkering attempts which have been made to remedy it. It appears as if the public relations of our profession were to remain for ever in an unsettled state, and the profession of medicine were to be perpetually a field for agitation. This appears to have been the opinion of the late Mr. Carmichael, for he took it for granted that once in every three years, so long as wills and trust-deeds endured, there would be grounds for medico-political agitation, and accordingly he provided fuel to keep up the agitation in a respectable manner by offering prizes for the most worthy combatant on the stage of medical reform afforded at the Royal College of Surgeons in Ireland. Up to the present Mr. Carmichael has proved a true prophet, and the war continues unabated. The founder of the Carmichael Prizes would be sadly disappointed if he could but know what a very small part of the brunt of the battle has been borne by his essayists. Of all medical reformers the authors of these costly and sometimes gigantic essays appear to be the least known. Of the two essays now before us we are bound to say that that which gained the second prize—though possibly not so elegant a literary production—is a much more outspoken, manly, and original work than that to which the first prize was awarded. Mr. Rivington's so-called Essay is to a large extent composed of extracts from Medical Directories and the proceedings of the General Medical Council. He does not seem to have taken the trouble to find out whether his information was correct or not. Mr. Rivington does not appear to be aware that a scheme for conjoint examination was agreed upon between

the University of Dublin, the King and Queen's College of Physicians, the Royal College of Surgeons in Ireland, and the Apothecaries' Hall, which scheme was sanctioned by the Medical Council on March 31st, 1873, and has never been repealed, but is in abeyance, because the Medical Council have never, *so far as can be ascertained*, obtained the approval of the Privy Council to that scheme. Mr. Rivington goes on to refer to the opposition which conjoint schemes met with in the Medical Council in 1876, and says:—"At the root of this opposition lay the difference in relative position of the Licensing Corporations and the Universities in Scotland and Ireland as compared with England. In Ireland the Universities compete with the Corporations in the bestowal of qualifications to practise, whilst in England they confine themselves to conferring the higher degrees." Mr. Rivington evidently knows nothing about the principles upon which the University of Dublin grants medical degrees, or he would have known that she does not compete with the Medical Corporations. He might also have ascertained that the Queen's University chiefly competes with the cheap Scotch Colleges, but not with the Irish Medical Corporations. We are informed by Mr. Rivington that there are 10 general hospitals and 16 special hospitals in Dublin. Among the latter we find mentioned "an Infirmary for Diseases of the Skin (25 beds)." We must say we are ignorant of the existence of such an institution in the year 1879. Perhaps this may refer to the "Leper House" in Lazar Hill, which existed in the olden time, and, we believe, was converted into a general hospital over 300 years ago. Simpson's Hospital is also classed here as a "special hospital." Everyone knows it is an asylum for decayed citizens of Dublin, and is no more an hospital in a medical sense than a dozen other institutions for old men and old women which afford relief to the needy citizens of Dublin. We have an imposing table of the ten General Hospitals of Dublin, with a column for remarks. We do not know who makes the remarks, but we find five only described as having extern departments, whereas all have. One is entered as having a "detached fever hospital," while in three others this kind of accommodation is unnoticed, although existing in each.

We must express our surprise that the Irish College of Surgeons awarded a prize to an essayist who showed himself so ignorant of Irish affairs. The quantity of Mr. Rivington's work seems to have weighed more than the quality, when comparing it with that of Dr. Laffan. While we differ materially from many of Dr. Laffan's

views, we nevertheless find in his essay a pleasing contrast with that of Mr. Rivington. Dr. Laffan is an opponent of conjoint examinations and uniformity of examination standard. He believes that "a uniform examination must necessarily be a low one," and says, "for no barrier over which the entire profession will have to climb can omit to take into account the necessities of the larger number." . . . It is useless to say that "such an examination can be levelled up to the height of the standard men. Such a levelling up would at once empty the medical ranks, and this no Government would allow." We have no wish to insist on uniformity of minimal examinations if any other means can be attained of excluding incompetent men from the profession, but we differ altogether from Dr. Laffan's argument that "such an examination cannot be levelled up to the height of the standard men." This is not a question of "cannot"—it can be done, and done easily, and none but "standard men" should be admitted to the profession. We have often before heard the argument used that no Government would allow the *supply* of medical men to fall short through making a sufficiently high standard of examination to satisfy the views of reasonably well educated medical men. This has been said, no doubt; but we have never heard of its being publicly expressed by any responsible minister, and trust we never shall. What is the real meaning of this statement, that if the standard is raised the supply will fall short? It means this—"Better have ignorant medical practitioners than have none," or else it means nothing. Now, we say exactly the contrary—better have *no* medical practitioners than bad ones. Let the standard be raised, and the result will very soon be that public institutions, boards of poor-law guardians, the army and navy medical departments, will have to look for medical officers, and offer inducements to medical practitioners to enter their service, which, at present, are quite unnecessary, as for any wretched poor-law appointment there are a dozen needy candidates, who, because they have got diplomas without being up to "the standard," cannot get any remunerative employment, and have to convert their profession into a petty trade. The demand at present is for "cheap doctors," and there are plenty to be had, because they are "bad doctors." Stop the supply of "cheap and nasty" medical men and only provide a "fair article," and the fair price will soon follow. It has been said that the trade of England in certain articles has become less profitable because the articles supplied have ceased to be of the sterling quality

which they formerly were. British medicine will soon fall into the same disrepute if quantity is to be made subservient to quality, and "the competition for the sale of diplomas" is to be longer permitted. Dr. Laffan evidently prefers a strong General Medical Council to any other method of constructing medical courts and examinations. We believe that a strong and independent Medical Council, with ample powers, could, if it *would*, carry out all the needful reforms; but we much fear the medical profession has lost all faith in medical councils with permissive powers, and that any new council likely to gain the support of the profession must be so constituted that its duties will be explicitly defined.

We cannot further dwell upon the Carmichael Essays, but commend Dr. Laffan's to Irish readers who admire the fearless and independent expression of an earnest medical reformer. So far as the information conveyed in Mr. Rivington's Essay is concerned, we can only say that the most of it will be found more correctly stated in Churchill's and the Irish Medical Directories. Mr. Rivington's Pamphlet has the advantage over his Essay that there is much less of it.

Dr. Jacob's pamphlet is clear and concise in its criticism of the existing method of supervision supposed to be exercised by the General Medical Council, and thoroughly practical is his suggestion for its improvement. We strongly advise anyone who wishes for correct and concise information as to the faults and failings of the Medical Council to read Dr. Jacob's pamphlet; and although all may not agree in his suggestions as the best possible plan for reforming the Medical Council, no one can fail to admit that Dr. Jacob proves by facts and figures that the Medical Council has failed in its mission, and that, from the very nature of its constitution, it was unlikely ever to fulfil the object for which it was instituted.

The two large blue books comprising the evidence laid before the Select Committee appointed in 1879 and in the first session of 1880, to report on the various Medical Act Amendment Bills, constitute two more volumes in the history of abortive attempts at Medical Reform. Up to the present the name of the profession has hardly been heard before any Select Committee, and her Majesty's Government appear to think it inadvisable that the profession should have any further opportunity of expressing its opinions, as the matter is "to be considered in the recess" by the responsible advisers of the Crown. We cannot say that we expect

much in the way of Medical or Sanitary Reform from a Government which has already thrown itself into the arms of the anti-vaccinators.

Dr. Hardwicke's book will prove a valuable source of information to those who may desire to know the conditions upon which medical practice is or may be pursued in any or every country of the world, even to the remotest corners of the earth. The work has been compiled with great care, and must have required a vast amount of labour and perseverance on the part of its author.

The Hypodermic Injection of Morphia: its History, Advantages, and Dangers. By H. H. KANE, M.D. New York: C. L. Birmingham & Co. 1880. Pp. 354.

In the October number of this Journal for last year was published a series of questions addressed to the profession by Dr. Kane relative to the hypodermic use of morphia. The answers received to these queries from some 379 physicians, and the scattered periodical literature of the subject, form, in the main, the material from which the present work results. The difficulty of arranging such material is, doubtless, great. And while we cannot congratulate Dr. Kane on having satisfactorily compiled a systematic work on the subject—if such was needed—or added much to our knowledge of it, we would commend his industry in having collected so much valuable information as to the use and abuse of this method of administering a powerful drug. Dr. Kane's book is useful also in bringing prominently before us the danger of the hypodermic injection of morphia, even in cases in which due care in the use of the drug is observed. In Chapter V. no fewer than thirty-six cases of death from this cause are given more or less in detail. Although the actual cause of death in some of these cases is doubtful, the number is large enough to arrest attention—especially as the cases recorded are possibly but a small percentage of those in which death has been directly due to morphia used in this way. One important fact brought out in this chapter is that some of the fatal accidents from the hypodermic use of morphia are due to the syringe having been had resort to after the previous ineffectual use of morphia by the mouth—a cumulative action thus being set up.

The alarming syncopal symptoms which also occasionally follow immediately the subcutaneous injection of morphia, receive full notice and careful study. Such accidents have by some been ascribed to

the entrance of a bubble of air into a vein. This theory, however, Dr. Kane doubts. He proved by experiments on himself that, in the first place, the injection of morphia into a vein (gr. $\frac{1}{8}$ in Dr. Kane's person) is quite sufficient to produce serious symptoms; and, in the second place, that the intra-venous injection of even more air than the bubble that could even by carelessness be left in a syringe is not sufficient to produce them. In making these experiments Dr. Kane had a ligature loosely applied above the point of insertion of the needle into his median cephalic vein, with the view of tightening the ligature should any dangerous symptoms arise. This plan appears to have been adopted with success in some cases in which syncope followed a hypodermic injection of morphia. And Dr. Kane insists that it is never safe to give a hypodermic injection of morphia, or of any other powerful drug, without a cord or tourniquet hanging loosely on the limb, ready for immediate use in case of necessity.

Dr. Kane devotes several pages to the effects temperament and idiosyncrasy have on the administration of morphia, and the reader is thus led naturally up to a consideration of the conditions in which its hypodermic use is hazardous. He adduces some experiments he made on dogs and rabbits, the results of which accord with the generally received view that interference with renal elimination (*e. g.*, ligature of the ureters) renders doses of morphia fatal that would otherwise cause only a stupor of some hours' duration.

In his chapter on the Treatment of Opium Narcosis, Dr. Kane points out that there are other measures to be adopted quite as important as the administration of atropia. From the stimulant action of strychnia or respiration, he suggests the use of it and atropia together, in this condition. The inhalation of oxygen gas, the subcutaneous injection of caffeine, and the reputed antidotal action of veratrum viride to opium, are also referred to. Opinions are somewhat at variance as to the advantages supposed to be gained by the combination of atropia with morphia for hypodermic use; and these are fully considered in a separate chapter, with the conclusion of which we fully agree. For hypodermic—or, more correctly, *pace* Prof. Packard, and the "succeeding edition or editions" of this book, hypodermatic—use, Dr. Kane prefers the sulphate of morphia, as being readily soluble in water. He thinks the plan of carrying the salt, and its antidotes, in the form of powders of definite quantities, and dissolving at the bedside when

required, an excellent one. Dr. Kane does not seem to be acquainted with the discs for hypodermic use made by Messrs. Savory and Moore, which would seem to us more accurate and convenient, and which we have always found satisfactory.

In order that clearer light may be shed upon some important and still unsettled questions, and for the purpose of adding to the completeness of this work in subsequent editions, the author (366 Bleeker-street, New York) requests members of the profession *everywhere* to answer the following questions at once:—

“1. In how many cases of *delirium tremens*, in what doses and with what result, have you used morphia hypodermically?

“2. Have you used the drug in this manner in acute inflammatory affections of the respiratory organs, and with what result?

“3. Have you used it in acute or chronic renal disease, and with what result?

“4. Do you know of any deaths due to the subcutaneous injection of morphia? If an autopsy was held, please state the result.

“5. Have you had any serious cases of narcotism from the use of morphia in this manner? If so, please state the condition of the pupils, number of the respirations and pulsations, the amount of morphia used, whether there was any known organic disease, and whether there was any opium idiosyncrasy.

“6. Have you had any cases where the drug was thrown directly into the blood? What were the symptoms and what the treatment?

“7. In what diseases have you used this method of administering morphia, and with what results?

“All communications will be considered strictly confidential, the reporter's name not being used when a request to that effect is made.”

Sea Sickness. By GEORGE M. BEARD, M.D., author of “Nervous Exhaustion,” “Our Home Physician,” &c. Pp. 74.

HAD the author been as anxious to condense his knowledge as to dilute it into a book, all the information contained in this volume could have been conveyed in a couple of columns in any medical periodical. Sea sickness is stated to be a functional disease of the central nervous system, and to attack the “nervous, delicate, and highly organised,” rather than “the coarse, the phlegmatic, and the strong.” As he immediately adds that the Americans suffer considerably more from sea sickness than the English do, we are left to infer that we have to thank our coarser nature for the uncom-

plimentary advantage. The treatment recommended is bromization, begun two or three days before quitting land, and continued throughout the voyage. Bromide of sodium is the salt preferred—in doses of thirty, sixty, or ninety grains, three times a day. He believes "the great value of the bromides in very large doses, as harmless and powerful sedatives, seems not to be understood in Europe." But bromides may fail from not having been taken till sea sickness has begun. In this case hypodermic injections of atropine, from $\frac{1}{100}$ to $\frac{1}{5}$ of a grain, are given. Citrate of caffeine, in doses of two or three grains, and cannabis indica, are recommended to relieve the sick headache. Of nitrite of aminyl he entirely disapproves, maintaining that its advocacy by physicians of any experience at all is "a proof of how much the study of this subject is needed in our medical schools." The preface states that the book is intended for practitioners of medicine and for travellers by sea; and, like most other works that are designed for two masters, it meets the requirements of neither. To one class it doles out information in homœopathic dilutions, to the other the technicalities are too dry for the "intellectual inactivity" which, according to the author, oppresses even voyagers who do not suffer from the *mal de mer*.

Carlsbad and its Natural Healing Agents, from the Physiological and Therapeutical point of View. By J. KRAUS, M.D. With Notes by the REV. JOHN T. WALTERS. Second edition. London: Trübner & Co. 1880. 8vo. Pp. 103.

THIS brochure will be read with interest and advantage by those physicians who are called upon—as most medical men are—to recommend patients the mineral waters best adapted to their particular ailments.

The little work opens with a few introductory notes by an English rector, whose infirmities of eight years' standing—the results of fifty years' hard work, of living in a dilapidated parsonage, and of drinking water out of a churchyard well—have been much ameliorated by the use of the Carlsbad waters. This gentleman gives very valuable information with reference to the routes from London to Carlsbad, based upon his own experience. He also intrenches a little upon the domain of Dr. Kraus in giving certain pieces of dietetic advice, in which, we think, he does not display much knowledge of the chemistry of wine. The worthy rector also

administers a rap over the knuckles to the British practitioners for their pertinacious adherence to "insular modes of treatment by strong drugs." However, the advice which the rector gives in reference to the routes, hotels, and dietaries which one should select or avoid is, we can say from some personal knowledge, well worthy of acceptance.

Carlsbad (Kaiser-Karlsbad) is a town in Bohemia, situated at an elevation of 1,123 feet above the level of the sea, and surrounded by scenery of great beauty. The town is of considerable antiquity, and its baths have been known from early ages; and since the fourteenth century have attained to a great, and, apparently, a lasting celebrity. There are no fewer than seventeen springs at Carlsbad, of which that termed the Sprudel is the most important. Their waters are abundant; and Dr. Kraus might as well have informed his readers that the daily yield of all the springs is, on the average, 2,000,000 gallons. The temperature of the waters varies according to the spring, that from the Sprudel säuerling is the lowest—namely, 23° C. (85° Fahr.); those of the Sprudel, Hygiea-Quelle, and New Hygiea-Quelle have the highest—namely, 59·5° C. (166° Fahr.). The chief ingredient of the water of the springs is sulphate of sodium. The Sprudel water contains, per pint of 16 oz., 18·216 grains of sulphate of sodium, 10·459 grains of carbonate of sodium, 7·915 grains of common salt, and salts of potassium, sodium, calcium, magnesium, aluminium, and strontium, phosphates, and silica, amounting, together with the sulphates, to 41·7 grains per 16 ozs., or 417 per imperial gallon. In these springs, in addition to the ordinary earthy and alkaline salts usually found in mineral waters, the Carlsbad waters contain the unusual ingredients—strontium, lithium, rubidium, cæsium, antimony, arsenic, thallium, zinc, bromine, iodine, fluorine, selenium, and formic acid.

The springs, though differing somewhat from each other in composition, have a general family resemblance. All of them contain the alkaline sulphates in greatest abundance, and all are consequently aperient. Their flavour is, considering the large quantity of alkaline salts which they contain, by no means disagreeable. Indeed to by no means an inconsiderable minority of drinkers their flavour is rather pleasant. They do not produce a disagreeable effect upon the stomach, as some purgative waters do. They cause very speedily one or more liquid stools, depending upon the quantity taken, and the idiosyncrasy of the patient. The dejections produced are usually foetid from presence of

sulphuretted hydrogen gas. An increase in the quantity of urine is invariably observed, generally about from the sixth to the eighth day, except in the case of those affected with diabetes, in which the amount of urine passed is much diminished. Intensely acid urine soon becomes faintly acid, but it never acquires an alkaline reaction.

The use of the Carlsbad waters is stated to produce an absorption of fatty deposits, to reduce the amount of free acids in the blood and intestinal tract, to dissolve renal and vesical calculi—especially those of small size—to promote peristaltic action, to liquefy the lymph when too thick and concentrated in the glands, to render the blood more liquid and lighter in colour, and to improve the appetite.

If the waters possess all of these valuable remedial qualities their use will well repay the expense and labour of a visit to Carlsbad. The evidence in favour of them is not alone that given by Dr. Kraus, which might, of course, be open to the charge of being not altogether disinterested. Many of the most eminent physicians of Germany send their patients to drink of, and lave in, these waters, and many medical men are to be found in Carlsbad using the waters themselves. There can be no doubt but that the experience derived from six centuries' use of these waters justifies the claim made on behalf of Carlsbad—namely, that it is “the queen of all watering places.”

Annales de Dermatologie et de Syphiligraphie. 2^{ème} Série. Nos. 1 and 3, 1880. Paris: G. Masson.

THE first series of these “Annales” came to an end some years ago upon the completion of the tenth volume, and always bore a high character for the ability and excellence of the papers published in its pages. The second series is now brought out under the auspices of some of the most eminent dermatologists and surgeons in France, and the numbers before us are of high promise. No. 1 includes six original memoirs, and of these the most novel and interesting is that by M. Besnier on a curious case of diffuse generalised leiomyomata of the skin—i.e., tumours composed almost wholly of smooth muscular fibre. A plate of the histological appearances is appended. No. 3 is a bulky part of 241 pages, and contains seven original memoirs, and a comprehensive abstract of recent literature. We can warmly recommend this serial to the notice of all who are interested in dermatology.

Medicinal Plants; being Descriptions, with original Coloured Plates, of the principal Plants employed in Medicine, and an account of their Properties and Uses. By R. BENTLEY, F.L.S., and H. TRIMEN, M.B., F.L.S. London: J. & A. Churchill. 1880. Parts 32-42.

THIS magnificent and important work on Medical Botany is now completed in four volumes, and includes over 300 coloured illustrations, many of them double plates. The publication of the parts—forty-two in number—has occupied more than four years, and the publishers and all who were concerned in the undertaking deserve much credit for the unfailing regularity with which the numbers were brought out. The work was originally designed to serve more especially as an illustrated botanical guide to the *British Pharmacopœia*, the *Pharmacopœia of India*, and the *Pharmacopœia of the United States of America*, and thus has claims to the support of pharmacists and teachers of *materia medica* in every country where these authorities are recognised. All the plants referred to in the first-named volume have, therefore, been figured and described, as also all mentioned in the primary list, and many of those in the secondary list of the U. S. *Pharmacopœia*, and, with a very few exceptions, all the official plants of the *Pharmacopœia of India*. It also includes other species in common medicinal use—though not official in this country—some which afford food substances, of value chiefly to invalids, and a few of our most poisonous indigenous plants. The text of each plant is divided into two portions—the first is devoted to purely botanical details, and was entrusted to Dr. Trimen; the second, or medico-pharmaceutical portion, was reserved for Dr. Bentley. The high reputation of each of the distinguished authors in their respective spheres secures that no pains have been spared and that the best possible results have been obtained by this division of labour. The plates which, with few exceptions, are artistically execute l, were drawn by Dr. Blane either from nature or from dried specimens.

The last section, which is devoted to *medicinal properties and uses*, is of special importance to the practitioner of medicine; and here great care and much discrimination have been exercised to give as full a summary as possible of those diseases in which the drug has been found of more especial value, as well as those in which it has been regarded as useful; and also those in which it seemed worthy of a more extended trial than it has hitherto

received in this country. We have previously, on many occasions during the course of its publication, expressed, in the pages of this journal, our opinion of the merits of this beautiful work. And we believe that all who examine it will agree with us that it is one of the most valuable contributions ever made to the scientific study of *materia medica*, and is indispensable to every teacher and earnest student of that branch of medical knowledge. We sincerely hope that its success will be commensurate with its deserts and with the enterprise of its publishers.

Montreal General Hospital Reports. Edited by WILLIAM OSLER, M.D., M.R.C.P. Lond. Vol. I. Montreal: Dawson Brothers. 1880. Pp. 369.

WE congratulate the medical profession in Canada on the first volume of Reports issued by the staff of the General Hospital of Montreal. As that institution has about 1,600 in-patients and 15,000 externs in the course of the year, there can be no lack of material, and, consequently, it is proposed to issue volumes of Reports at intervals. A very modest preface preludes a number of original and interesting communications. The first paper is on Leucocythaemia, by Dr. Howard. Out of four cases, all fatal, he had the advantage of two *post mortem* examinations. In neither was anything unusual observed except the condition of the marrow of the bones. In both cases it presented (1) ordinary colourless marrow cells with granular protoplasm and distinct nuclei—some larger than, even double the size of, white blood-corpuscles, and some of the same size; (2) small round lymphoid corpuscles with large nuclei; (3) ordinary red corpuscles; (4) nucleated red corpuscles, varying in size and depth of colour—transitional or embryonal forms, the nuclei often eccentric; (5) some large *non-nucleated* red discs, which presented a striking similarity to the smaller nucleated forms; (6) myeloplates. Although this condition of marrow shows in a well-marked degree the changes which have been of late regarded as due to a hyperplasia of that structure, the writer does not believe there is yet sufficient evidence to establish a form of leucocythaemia dependent solely upon this condition of marrow. In this negative view he is confirmed by M. Hayem, whose latest investigations have led him to conclude that the haematopoietic function of the bone marrow is problematical. In both cases the spleen was much enlarged and firm. The relative proportions of the red and white

corpuscles of the blood varied greatly in the four cases observed, and, even in the same case, at different times. In the one individual the relation of the white to the red ranged between 1 white to 29 red, and 1 white to 319 red; while in another it ranged between 1 white to 5·7 red, and 1 white to 8·4 red. In one case as the blood grew richer in red corpuscles it grew poorer in white; in another when the red increased so did the white, and *vice versa*. The size of the red corpuscles was tolerably uniform in all. The very small red corpuscles so frequently found in pernicious anaemia were not seen, nor does the author seem to have remarked any of the irregular-shaped or tailed corpuscles such as Dr. Finny lately described in his cases of idiopathic anaemia.

Dr. Roddick details a case of Favus, of interest on account of the eruption having spread over the patient's entire body. The face, ears, and front of the neck were free, also the hands and feet. The sides of the body and buttocks were thickly covered, as well as the extensor surfaces of the limbs, but there was little indication of any symmetrical arrangement.

The editor's "Cases of Cardiac Abnormalities" are well reported. With the exception of the statement in the metric-system table—that a centigramme=half a grain, instead of a sixth of a grain—the volume is free from typographical errors.

The Student's Guide to Surgical Anatomy. By EDWARD BELLAMY, F.R.C.S.; Surgeon to Charing Cross Hospital. London: J. & A. Churchill, New Burlington-street. 1880. Pp. 317.

THE first edition of this book was published seven years ago, and received a very favourable judgment. In the present issue the author has added much new material, and has rearranged the greater part of what has already appeared. We do not know any book of the kind which will be found so useful to students and to surgeons preparing for the higher examinations. The surgical anatomy of regions is, generally speaking, well done, although some revision is still needed to weed out errors that have crept in—such, for instance, as the statement that the vertebral artery and the superior thyroid are given off in the third stage of the subclavian artery. We are not told either what are the limits of the three stages—an important omission. But the book is well printed, the woodcuts are good, and altogether the student will find in it much that is novel and valuable.

THE BOSTON
SOCIETY FOR
MEDICAL
PRESERVATION

PART III.

HALF-YEARLY REPORTS.

REPORT ON SURGERY.

By WILLIAM THOMSON, A.B., F.R.C.S.; Surgeon to the Richmond Hospital; Member of the Surgical Court of Examiners, Royal College of Surgeons, Ireland; Examiner in Surgery, Queen's University, Ireland.

ON THE INTRODUCTION OF TRACHEAL TUBES BY THE MOUTH.

MR. W. MACEWEN, of Glasgow, has a paper in *The British Medical Journal* (July 24 and 31) in which he advocates the introduction of tracheal tubes through the mouth, instead of performing tracheotomy or laryngotomy, in cases in which these operations might be considered necessary. He is by no means the first who has suggested this mode of treatment, for the names of Desault, Bouchut, Trendelenburg, Schrötter, and others are associated with similar attempts. But he has directed attention to a mode of dealing with certain forms of laryngeal stenosis which may be used successfully, if not always easily. Mr. MacEwen reports in all four cases in which he adopted this method; but it is to be noted that they were in all instances adults, and that the tube was introduced for the following reasons:—Case I. Removal of epithelioma of pharynx—tube introduced through the mouth to occlude haemorrhage from the larynx; Case II. Oedema glottidis; Case III. Oedema glottidis; Case IV. For eradication of an epitheliomatous growth. The method of introduction, and the deductions which Mr. MacEwen draws may be given in detail:—

“*Is the introduction of such tubes easy?*—The following is a question very often asked: Is the introduction of tubes into the trachea easy? This at all times must be a difficult question to answer for others, as the case will depend on the experience of the operator. Personally, having had considerable practice in the passage of oesophageal bougies and catheters, I would be inclined to say that the introduction of tracheal tubes would be more difficult than the passage of urethral catheters into normal

urethræ; but they could be passed a great deal more easily than catheters in most cases of urethral stricture. Before passing tracheal instruments in the living, it would be well to practise on the "subject," as this helps to cultivate the touch. Given a quiet patient in health, the introduction of the tracheal tube will be found almost as easy for the operator as its passage *post mortem*. In the two cases of œdema glottidis which I have treated in this way, the introduction of the tubes was more easy than in the cases with healthy larynges. In the former, the parts were fixed, thrown further forward in the mouth, and much less sensitive, all favouring the introduction of the tubes. The first insertion is for the patient the most disagreeable, the subsequent ones being attended with comparatively few manifestations of uneasiness.

"*Mode of introducing the tubes.*"—The mode of introducing the tubes has already been alluded to in the remarks on the dead body. [This is stated to be best done by passing the finger into the mouth, depressing the epiglottis on the tongue, and so guiding the tube over the back of the finger into the larynx.] The only difference is that, if any hitch occurred at the level of the cords, it might be overcome by asking the patient to take in a deep inspiration, during which the instrument ought to be passed. The head ought to be thrown back during the insertion of the tubes.

"*How to recognise that the instrument is in the trachea.*"—How would one recognise the presence of the instrument in the trachea? 1. By finding the instrument pass over the first ring or two of the trachea; 2. By finding that the air flows into the tube during inspiration and out during expiration—the opposite being the case if it be in the œsophagus; 3. By the mucous expectoration being expelled from it; 4. By the negative signs that it is not in the œsophagus or stomach—i.e., blowing up the stomach through the tube, &c. Before introducing the tubes, an examination by the laryngoscope ought to be made to ascertain the precise state of the parts.

"*Deductions.*"—The practical deductions which may be drawn, *tentatively* at least, from these cases are as follows:

"1. Tubes may be passed through the mouth into the trachea not only in chronic, but also in acute affections—such as œdema glottidis.

"2. They can be introduced without placing the patient under an anaesthetic.

"3. The respirations can be perfectly carried on through them.

"4. The expectoration can be expelled through them.

"5. Deglutition can be carried on during the time the tube is in the trachea.

"6. Though the patient at first suffers from a painful sensation, yet this passes off, and the parts soon become tolerant of the presence of the tube.

"7. The patient can sleep with the tube *in situ*.

"8. The tubes, in these cases at least, were harmless.

"9. The ultimate results were rapid, complete, and satisfactory.

"10. Such tubes may be introduced in operations on the face and mouth in order to prevent blood from gaining access to the trachea, and for the purpose of administering the anaesthetic; and they answer this purpose admirably."

In the last case the tube had been several times introduced by way of training, and the patient lay down on the table with the instrument in his trachea, but he requested that it should be removed because of some unpleasantness caused by it. Soon afterwards, when the chloroform administration was renewed, the patient ceased to breathe, and the *post mortem* examination seemed to show that there had been some apoplectic attack. The state of the larynx and of the cord is interesting. "The bronchi and bifurcation of the trachea were congested (there was a history of chronic bronchitis), the congestion extending for an inch above the bifurcation. From this point there were several points of slight congestion, the shade becoming very slight as it proceeded upwards towards the true cords. At these isolated points, two of them above and one below the vocal cords, there were appearances of ecchymosis on the mucous membrane, each having a superficial area of about three millimètres in diameter (about the size of a pea or a large barley grain). In cutting into these it was seen that they were superficial, extending no further than the mucous membrane. The cords were very slightly thicker than normal, probably due to some chronic action. There was also a slight thickening of the posterior part of the laryngeal orifice." It is certain that in some forms of disease the method may be used with advantage, but that it will never exclusively take the place of tracheotomy or such operations upon the air passages, is as certain. Assent on the part of the patient is a necessary element in the success of the proceeding, and it is impossible to receive that in young children. In cases of diphtheria and croup there is always the danger of detaching some of the membrane and pushing it further into the trachea, so as to block up, perhaps absolutely, the air passage, and so produce death. The need for frequent cleansing of the tube in such cases also would lead to the frequent repetition of a difficult operation, which might at any moment fail through the conditions of the case or the struggles of the child. Many other objections will suggest themselves. In cases of adults, whose reason can be appealed to, and whose help may be secured, and in cases in which we have

simply to deal with tumefaction without detachable structures, the method may be found of much use, and it is one that ought to be tried, at all events, where time allows of it.

THE TREATMENT OF GONORRHOEA.

Mr. W. Watson Cheyne, Assistant-Surgeon to King's College Hospital (*Brit. Med. Journal*, July 24, 1880), has carried out a series of experiments in the treatment of gonorrhœa which are worthy of being extensively known. It has been demonstrated by Neisser that organisms are present in great abundance in gonorrhœal pus, and Mr. Cheyne has verified the observations by inoculating cucumber infusions with some of the discharge. Acting upon the known effects of certain antiseptic materials, he decided to adopt iodoform and oil of eucalyptus. In order to bring them into certain contact with the suppurating surface, he had bougies made of these materials and cacao butter. The formula is—five grains of iodoform, 10 minims of oil of eucalyptus, and 35 grains of cacao butter. The bougie is introduced into the urethra, and a strap and pad over and around the orifice retains the bougie there until it is dissolved. After this, an injection of boracic lotion (saturated aqueous solution of boracic acid) or an emulsion of eucalyptus oil (one ounce of eucalyptus oil, one ounce of gum acacia, water to 40 or 20 ounces) to be used for two or three days. At the end of that time injections of sulphate of zinc, two grains to the ounce, may be begun. For a day or two the purulent discharge continues, but afterwards it steadily diminishes in amount, becoming in four or five days mucous, and ceasing altogether in a week or ten days.

HAMMOCK SUSPENSION IN THE TREATMENT OF SPINAL CURVATURE.

Some surgeons have objected to the method of suspension used by Sayre in angular curvature of the spine, and various plans have been suggested by which less violence may be done to the parts than, it is supposed, is likely in the original method. Mr. Davy, of the Westminster Hospital, recommends the prone position in these cases while the jacket is being applied (*Brit. Med. Journal*, June 26, 1880), and in order that this may be conveniently done he adopts the following means:—

“A piece of strong canvas is procured, longer than the patient's height; and the arms are passed through two slits in the canvas at suitable points, so that, in the first instance, a loose canvas long apron, with ends, one

turned downwards over the chest, and the other on the floor, fits around the front and sides of the body. This apron is then removed from the patient, and a vest applied, of thicker material and far more open mesh than those usually supplied by the surgical instrument makers. The canvas hammock is next slung, at two fixed points, by attaching its two folded ends with two stout bandages; and the surgeon should test its bearing power by the weight of his own body. The patient is placed in the canvas. No dinner-pad is required, because the manipulations are performed after a good meal.

"At this stage an aperture in the hammock is made over the patient's lips, to permit free breathing and conversation. The patient is then finally localised in position, according to the variety of spinal curvature (extension by the head, arms, and legs being applied by those surgeons who deem it to be necessary), and the surgeon leisurely applies the plaster-of-Paris or other fixing material, including the canvas, which, of course, has been accurately cut to shape the dorsal contour.

"The free current of air around the patient's body, and, if the surgeon please, the hammock's suspension near to a fire, facilitates the regular and simultaneously complete drying of the plaster; and so very comfortable are young children in these hammocks, that they either enjoy the swinging motion, or not unfrequently fall asleep. When the bandage has firmly set (and not before, for the patient can remain swung for any reasonable space of time), the whole hammock and patient are taken down; the superfluous ends are neatly cut off with scissors, so that in these instances it may be literally said, and without irreverence, they take up their bed and walk; the canvas remnant acting as an accessory vest to the patient's frame."

NEPHRECTOMY.

Several cases of this operation have been reported of late, and the results show an extraordinary amount of success. In *The Lancet* (June 5, 1880) Dr. Day and Mr. Knowsley Thornton report a case in which the left kidney was successfully removed from a child for hydronephrosis. The patient was seven years of age, and when she first presented herself at the hospital the physician discovered an abdominal tumour of irregular outline and freely movable, rather firm in some places, but elastic in others. It was particularly elastic and prominent between the umbilicus and pubis, where fluctuation was detected. The outline was not unlike that of a large multilocular ovarian cyst, and on deep inspiration it could be seen extending an inch above the umbilicus. There was a considerable quantity of free fluid in the peritoneal cavity. There was no enlargement of spleen or liver. Traced backwards the tumour

seemed as if it might start from the left kidney. A coil of intestine crossed it from left to right crosswise, and then from right to left. Midway between the umbilicus and pubes there was a soft, elastic, fluctuant swelling to the right of the umbilicus, and between it and the right anterior spine of the ilium the note was tympanitic (caecum). The lower ribs, especially on the left side, were much pressed outwards, and the percussion note was very resonant over both hypochondriac regions. The girth, at the umbilicus, was 26½ inches—on the right side it was 12½ inches; on the left, where it was prominent, it was 14 inches. There was no pulmonary or cardiac disease. The urine was normal. It was stated that for a long time before admission, the patient had only passed urine once a day, and that the quantity was small.

As to the diagnosis there was difference of opinion between its being renal, mesenteric, or ovarian, and an antiseptic tapping was proposed. This was done, midway between the umbilicus and the anterior superior spine of the ilium, when six and a-half pints of a brownish-coloured fluid were drawn off, having an acid reaction and urinous odour. Next day the patient passed three pints of clear normal urine, and on the day following forty-four ounces. Then it decreased to nine ounces. The cyst refilling, it was determined to remove it, and the operation was performed. The wall was very thin, and the cyst was emptied by means of a trocar. The cyst was enclosed between the layers of the descending mesocolon, the descending colon having been pushed forward and to the right as the cyst enlarged. The sigmoid flexure was also much displaced, and lay across the lower part of the cyst, and between it and the bladder; the latter was distended with urine, and rose considerably above the pubes. The renal artery and vein were tied separately about an inch from the aorta. The patient was convalescent on the twenty-third day.

Dr. Thomas Savage, of Birmingham, reports in *The Lancet* (April 17, 1880) a case of hydronephrosis in the adult, in which nephrectomy was performed successfully. The patient was aged forty-six, and had a tumour about the size of a foetal head, occupying the right lumbar and umbilical regions. It was elastic, very movable and painless, and appeared to spring from the right kidney. There was no history of blood or pus in the urine, but she had suffered from renal colic. Abdominal section appears to have been done without any previous tapping. The fluid was clear and watery, but was mixed with other matters by accident, and no

examination could therefore be made. The wall of the cyst on the outer and front part was made up of true renal structure—i.e., the dilated pelvis of the kidney, in which were seen the enlarged calyces and papillæ. The outer part of the cyst wall was evidently made up of two portions—an outer, being a continuation of the capsule of the kidney, and an inner, apparently derived from the lining of the enlarged pelvis. A wire clamp was applied about the middle of the collapsed cyst, and about one-half of the distal portion—i.e., about one-fourth of the whole mass of the cyst was cut away, leaving one-fourth still attached to the distal side of the clamp. Perchloride of iron was applied to it, and carbolised oil used as a dressing. The clamp was removed on the twenty-third day, the sloughing stump gradually cleared, and the patient left hospital on the 1st March, the operation having been done on 16th January.

Mr. Chauncy Puzey, of Liverpool, reports in *The Lancet* (Feb. 7, 1880) another case of Nephrectomy. The patient was a coloured seaman, who had suffered from stricture, and who had developed renal abscess, after an operation upon the urethra. The symptoms became so urgent that it was resolved to cut down through the loin upon the kidney. A trocar pushed into it gave exit to much pus, and the gland was then laid open upwards and downwards to the extent of two or three inches, and washed out with carbolised water. The thermo-cautery was used to stay the bleeding from the cut surfaces, a drainage tube was introduced, and the dressing was completed antiseptically. Eight weeks after the operation the urine was almost free from pus, and the wound was completely closed, with the exception of a small sinus, which was kept open by the drainage tube, which was then removed. Urgent symptoms occurred, and the tube had to be reintroduced. As it was supposed that there must be some obstruction in the ureter, a long French bougie was passed through that tube, but was stopped apparently at the vesical end. The patient meanwhile increased two stones in weight, and expressed himself as better in health than he had been for twelve years. It was, however, thought that by reopening the wound at the kidney and keeping it widely patent as long as possible, the organ would contract and ultimately altogether cease its functions. This was done, and for a time the patient progressed, but he then began to fail, and finally died on the 11th of October—the operations having been performed on the 2nd April and 4th September respectively.

Mr. Clement Lucas removed the left kidney of a man aged thirty-six, in Guy's Hospital, on Feb. 17 (*Lancet*, Feb. 28). The cause was scrofulous disease. At the time of the report the patient was doing well.

Mr. A. E. Barker, of London, reports a case (*Lancet*, March 13, 1880) in which the operation was performed on a woman aged twenty-one, for a tumour of the kidney. She had suffered lumbar pain for eight months, and three months before her admission to hospital a medical man had diagnosed a movable kidney. She suffered from intense pain, frequent nausea, vomiting, and haematuria. The tumour was supposed to be encephaloid. The kidney was removed by abdominal section. The ureter was tied separately, and the pedicle in two places by transfixion. Twenty-four hours afterwards she was as strong as before the operation ; but in a few hours she became weak, with hurried breathing, and it was believed that she was the subject of thrombosis. She died on the second day. At the *post mortem* examination the abdominal cavity was found all that could be desired, but there was a large thrombus in the right side of the heart and in the pulmonary artery. There were secondary deposits in the lungs and lumbar lymphatic glands.

Mr. Barker gives a record of all the cases reported—viz., twenty-eight, of which fourteen recovered—a very large percentage considering the character of the operation.

THE TREATMENT OF PELVIC SUPPURATION BY ABDOMINAL SECTION.

At a meeting of the Royal Medical Chirurgical Society (*Lancet*, May 22, 1880), Mr. Lawson Tait, of Birmingham, read a paper on this subject. In very many of these cases the abscess opens into the rectum or other part of the intestine, the bladder, or amongst the muscles of the anterior abdominal wall. When these openings occur either death follows or recovery is very protracted. Even when the abscess opens into the vagina, or can be tapped from that canal, the recovery is frequently prolonged to an extent not commensurate with the size of the abscess. Six cases of pelvic abscess are narrated, all of which seem to have originated in extra-peritoneal haematoceles. The abscesses were opened from above, the opening in the abscess cavity being carefully stitched to the opening in the abdominal wall. Wide glass drainage tubes were inserted, and afterwards changed for smaller, and finally for wire or soft rubber ones. The patients were quite well in about thirty

days. The operation was neither difficult nor dangerous, and in future he would always advise an exploratory incision where there is proof of an abscess. The first four cases were treated anti-septically during, but not after, the operation. In two no anti-septics were used at any time, and in the sixth case all septic symptoms ceased as soon as the abscess was evacuated, and the air had free access to the cavity.

REMOVAL OF THE TONGUE BY MEDIAN DIVISION OR SPLITTING.

Mr. Morrant Baker, of London, recommends a method of removing the tongue for disease which seems to possess some advantages. The operation is thus described (*Lancet*, April 10, 1880):—"After the introduction of a suitable gag, and the removal of any sharp or jagged teeth which might be in the way of the operator, two threads are passed through the tongue about an inch behind the tip, and half an inch on each side of the middle line. The tongue being now drawn forwards and upwards, the frenum, and, as far as it may seem necessary, some of the muscular attachments of the tongue to the lower jaw in front are now snipped through with strong, rather curved, scissors, and the scissors are then run along the floor of the mouth at the side, beneath the mucous membrane, as far back as may seem requisite, keeping close to the lower jaw, both for the avoidance of haemorrhage and for the sake of being clear of the disease. The operator now with his forefinger clears the tongue in front and at the sides, and drawing it well forward again, and giving one thread to his assistant while he holds the other himself, he cuts steadily along the middle line of the tongue from the tip backwards and farthest along the mucous membrane. On the withdrawal of the knife the finger is again introduced, and it will be found quite easy to complete with it the median division of the tongue by a little tearing or splitting between the two halves. The only part which cannot be thus torn is the mucous membrane of the dorsum. Hence the advice just given to divide this with the knife as far as may seem necessary for getting beyond the level of the disease. The ecraseur is now slipped over the diseased body of the tongue, the assistant turning the screw while the operator keeps the loop as far behind the disease as possible. This is, of course, one of the most important parts of the operation, any want of care at this stage being shown afterwards by the narrow margin of healthy tissue, or by none at all, left attached to the diseased mass. The insertion of

curved needles behind the disease, in order to ensure the division by the ecraseur of healthy tissue, is often advisable, but, for the reasons previously given, must not be considered a sufficient safeguard in the absence of free separation of the tongue's attachments in front and at the sides."

Mr. Baker finds this method good not only in cases of partial removal of the tongue, but of the whole organ also. The two halves are more completely under control than the tongue as a whole, and by working with two ecraseurs simultaneously no time is lost.

PARACENTESIS OF THE PERICARDIUM.

Dr. Kummell, of Berlin (*Berliner klinische Wochenschrift*, 23, 1880, and *Med. Rec.*, July, 1880), relates the history of two cases in which this operation was performed. In the first a young man was suffering from acute rheumatism, with considerable pericardial effusion. The dyspnoea was extreme, and in order to relieve this symptom paracentesis of the sac was decided upon. The needle of an aspirator was passed in at the fourth intercostal space, and about two ounces of blood-stained fluid were removed. The dyspnoea ceased almost immediately, there was no recurrence of the effusion, and the patient recovered rapidly. In the second case the patient was aged fifty, very anaemic, and emaciated. There was effusion into the left pleura and into the pericardium. On the sixth day of treatment the pericardium was aspirated, and thirteen and a half ounces of clear fluid were removed. The relief was immense, but in two days it was found necessary to repeat the operation. Fifteen ounces were removed, but the patient died on the fourth day, the fluid having rapidly reaccumulated. At the *post mortem* examination thirty ounces of fluid were found in the sac. The wounds made by the needle had healed, and no trace of inflammation could be found in the course of that instrument. Kummell recommends that a preliminary puncture should be made with a Pravaz's syringe, which can be done without danger. The puncture should be made about two inches from the left margin of the sternum, in one of the spaces between the cartilages of the fourth and seventh ribs. The puncture is best made with a hollow needle, of the diameter of about one-twelfth of an inch.

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By WALTER G. SMITH, M.D., Dublin ; Fellow and Censor,
K.Q.C.P.N Physician and Pathologist to the Adelaide Hos-
pital.*

ART. 1. Benzine and Benzol.
 " 2. Dialysed Iron.
 " 3. Soap Bark.
 " 4. Explosive Prescriptions.
 " 5. Boracic acid.
 " 6. Thymol.

1. *Petroleum Spirit and Coal-Tar Naphtha.*—Benzine is occasionally prescribed by medical men, and although it is well known to professional chemists that petroleum spirit is composed of hydrocarbons quite distinct from those constituting coal-tar naphtha, yet among the general public, and to a certain extent among people possessed of some knowledge of chemistry, great confusion has arisen as to the nature of the liquids known in commerce as "benzine," "benzene," "benzol," and "benzoline." Of these, the hydrocarbon *benzol* or *benzene*, C_6H_6 , is the chief and characteristic constituent of coal-tar naphtha, while it is present in very insignificant amount in petroleum spirit or mineral naphtha. The terms *benzine* and *benzoline* have no scientific application, and are merely commercial names for petroleum spirit. It is owing, in a great measure, to the similarity of these names to those of the chief constituent of coal-tar naphtha that confusion has occurred, but it has been made far worse by the accidental or intentional substitution of one liquid for the other, until it is difficult to obtain the coal-tar product retail, even when it is asked for by its proper name. This would be of but little consequence if the two liquids were of exactly similar nature, but in certain cases they present decided differences of behaviour, although in general characters there are very close resemblances.

* The author of this Report, desirous that no contribution to the subjects of *Materia Medica* and *Therapeutics* should remain unnoticed, will be glad to receive any publications which treat of them. If sent to the correspondents of the Journal they will be forwarded.

The following tabular statement of the characteristic differences between petroleum spirit and coal-tar naphtha has been compiled by Mr. A. H. Allen from various sources, and includes a few original tests. All the characters given have been carefully verified by actual experiment on representative samples of commercial petroleum spirit and coal-tar benzol:—

*Petroleum Spirit, "benzoline,"
or "benzine."*

1. Consists of *heptane*, C₇H₁₆, and its homologues.
2. Heptane contains 84·0 per cent. of carbon.
3. Burns with a somewhat smoky flame.
4. Commences to boil at 54° to 60° C.
5. Specific gravity about ·69 to ·72.
6. Smells of petroleum.
7. Dissolves iodine, forming a solution of a raspberry red colour.
8. Does not sensibly dissolve pitch, and is scarcely coloured by it, even on prolonged contact.
9. When shaken in the cold with one-third of its volume of fused crystals of absolute carabolic acid, the latter remains undissolved.
10. Requires two volumes of absolute alcohol, or four or five volumes of methylated spirit of ·828 specific gravity for complete solution at the ordinary temperature.

*Coal-Tar Naphtha, or
"benzol."*

1. Consists of *benzene*, C₆H₆, and its homologues.
2. Benzene contains 92·3 per cent. of carbon.
3. Burns with a very smoky flame.
4. Commences to boil at about 80° C.
5. Specific gravity about ·88.
6. Smells of coal-tar.
7. Dissolves iodine, forming a liquid having the colour of a solution of potassium permanganate.
8. Readily dissolves pitch, forming a deep-brown solution.
9. Miscible with absolute carabolic acid in all proportions.
10. Miscible with absolute alcohol in all proportions. Forms a homogeneous liquid with an equal measure of methylated spirit of ·828 specific gravity.

—(*Pharm. Journ.*, 13th Sept., 1879.)

2. *Dialysed Iron.*—This newly-revived candidate for favour has given rise to a considerable amount of investigation and discussion,

and opinions are still unsettled both as to its physico-chemical properties and as to its therapeutical value.

It should at the outset be clearly understood that dialysed iron is a very basic oxychloride of iron, prepared by the process of dialysis, and, from one point of view, it may be regarded as a solution of a very large amount of ferric oxide in a very small amount of ferric chloride. The iron exists in the colloidal state, in which it has a very low diffusive power, and the preparation therefore represents a chalybeate solution, which will *not* pass through a dialysing septum, precisely the contrary to what its name implies. It has been claimed for dialysed iron that the absence of astringent properties, free acid, and ferruginous taste, render it of special value among the preparations of iron. On the other hand, it is well known, as pointed out by Dr. Inglis Clark (*Pharm. Journ.*, 27th March, 1880), that dialysed iron is precipitated by mere admixture with town water, and even when administered diluted with distilled water it must be entirely precipitated when it reaches the stomach. This, at first sight, appears a serious objection, for unless in solution the iron cannot be assimilated, and on this ground dialysed iron has been pronounced worthless. Thus M. Personne concludes, from his experiments, that this form of iron is quite incapable of absorption and is consequently inactive, in virtue of the old and universally true principle—*corpora non agunt nisi soluta*. At the time of its discovery, more than twenty-five years since, it was recommended as a therapeutic agent, the more convenient from its being devoid of the inky taste of salts of iron, but notwithstanding this it was quickly abandoned. To the query—Why did it not succeed at that time and does succeed now, the compound being the same? M. Personne replies:—Misleading advertisement everywhere and under every form can alone explain it.—(*Pharm. Journ.*, 29th Nov., 1879; from *Journ. de Ph. et de Ch.*) It is, however, held by many that the stomach contains sufficient hydrochloric acid to redissolve the precipitated ferric oxide, and that this actually happens when it is administered, while the testimony of physicians would go to show that it is capable of absorption.

In a recent paper (*Pharm. Jour.*, 6th March) Professor Redwood has attacked this view, and expresses his belief that even when so dissolved in the stomach it cannot be assimilated, because of the colloid and non-diffusible form in which it dissolves. This belief is based on his experiments, and in view of these results Dr. Redwood maintains that it can hardly be conceived that dialysed iron should

be an active or efficacious medicine. At any rate it remains for those who advocate its use to suggest a theory by which medicinal activity may be reasonably ascribed to a substance having the properties which this preparation has been proved to possess. In the same paper Dr. Redwood shows that the scaled preparations of iron of the B. P., although as yet uncrySTALLisable, are not subject to the objections which have been urged against dialysed iron, and that they are by no means colloidal or wanting in diffusibility.

Dr. Inglis Clark's observations (*loc. cit.*) on the diffusibility of the chalybeate compound existing in dialysed iron do not quite accord with those of Dr. Redwood, and he suggests that even supposing that the iron remains in a colloid non-diffusing form, it does not follow that it cannot be assimilated, else how can gelatin, starch, and other colloids be digested, unless they pass through an intermediate crystalloid state. The truth would seem to be that the practical value of dialysed iron is far more surely to be tested by careful clinical observation—*e. g.*, by noting the increase, if any, of red blood-corpuscles under its use, than by purely physico-chemical research, for we know too little of the processes involved in nutrition.

In the discussion which followed on Dr. Clark's paper, Mr. Stephenson mentioned a case which had come under his personal observation, in which it was desirable to get iron rapidly and in large quantities into the system. Under dialysed iron for two months this case had made little or no improvement; but under Blaud's pills, which contain $2\frac{1}{2}$ grains of sulphate of iron each, it subsequently underwent a rapid and wonderful improvement. Similarly, Professors Stillé and Maisch have found dialysed iron "utterly to fail in cases for which iron appeared to be the proper remedy, and which other preparations caused to speedily improve."—(*National Dispensatory*, 1879, p. 641.)

3. *Soap Bark* (*Quillaia saponaria*).—The bark of this Chilian tree contains, among other ingredients, saponin, a principle widely diffused throughout the vegetable kingdom, and which makes an abundant froth with water. It is stated that an infusion of the bark fulfils all the requirements of a mild soap, and further acts as a moderate stimulant and astringent on the skin. It has been used with marked benefit in dandriff of the scalp, in pityriasis, and has afforded excellent results in chronic ulcers and eczema of the extremities. The infusion is also a valuable remedy for aiding

arresting excessive secretion and foetid perspiration. In cases involving the face and armpits, the patient is instructed to dip a small piece of sponge in the infusion, and carefully mop over the surface once or twice daily. When the hands and feet are affected they should be bathed in the solution nightly, or on alternate nights, according to the condition. When a more active stimulant and astringent effect is required, the tincture of saponin can be employed with much advantage. The tincture is prepared by extracting the bark, as already mentioned, by means of strong boiling alcohol. The solution thus formed is clear and of a deep wine colour, and a pungent taste. It is chiefly employed as an external remedy, and when applied to a part has a refrigerant effect. It is miscible with both water and oil, and has the power of dissolving, emulsifying, and removing fats and dirt from the skin. In many diseases, especially in *Seborrhœa sicca*, it is far preferable to the tincture of green soap. It has all the advantages that are claimed for the tincture of green soap, and at the same time is free from the high diffusive, penetrating, and destructive action on the tissues that the latter possesses. This tincture has been used with great benefit not only in diseases to which the infusion is applicable, but also in general thinning and loss of hair in different parts of the body. It can be employed with great advantage as an addition to the internal treatment in that variety of the loss of hair in which the scalp is to all appearances healthy, but the surface is covered with short, fine, and downy hairs. In cases of this description it should be applied in full strength with a sponge, and should always be thoroughly rubbed into the scalp, and afterwards rinsed off with water.—(*Phar. Jour.*, 6 Sept., 1879, from *Druggist's Circular*.)

Tincture of Quillaia (4 oz. bark to 1 pint of rectified spirit of wine) also possesses very active powers as an emulsifying agent, and appears likely to occupy a useful place in pharmacy for that purpose. Mr. Collier (*Phar. Journ.*, 20 Sept.) has prepared, with complete success, emulsions of a number of substances, such as chloroform, fixed oils, copaiba, &c. The following formula for *Mistura Filicis Maris* is adopted at Guy's Hospital:—

<i>Ext. Filicis Liq.</i>	-	-	3 <i>i.</i>
<i>Tinct. Quillaiae</i>	-	-	3 <i>ss.</i>
<i>Syr. Zingiberis</i>	-	-	3 <i>ss.</i>
<i>Aq. Destill.</i>	-	ad 3 <i>i.</i>	<i>Misce.</i>

If some mercury be shaken up in a bottle with tincture of quillaia, the metal is reduced to a very fine state of division. It has much the appearance of hydr. c. cretā, and examined with a lens is seen to be composed of distinct globules of mercury.

4. *Explosive Prescriptions.*—From time to time medical and pharmaceutical journals record instances of explosions which have occurred in pharmacies owing to the mixture of explosive substances, and which have occasioned more or less serious accidents, and in the *Report* for August, 1870, several illustrations of this were adduced. M. Kaueffer has lately published an interesting study upon this question, and, in an experience of more than thirty years, has witnessed several cases of explosion. One day he had occasion to prepare an ointment containing *chloride of lime, sulphur,* and other substances. When the two first-named bodies were triturated together a series of small detonations occurred, and the whole mass deflagrated violently. A similar ointment had been many times prepared without any difficulty, and the probable cause of the mishap was the presence of chlorate of lime in the chloride of lime. Upon another occasion some *oil of turpentine* was poured into a stone jug, when immediately the vessel broke, and a thick column of black smoke was disengaged. It was then discovered that a small quantity of sulphuric acid had been in the vessel into which the turpentine was poured.

Again, a highly dangerous substance—viz., *nitro-glycerine*, has been suggested in practice, and, under the name of glonoin, it has been adopted by homœopaths. This medicament is kept in little glass vessels, which, upon the least shock, burst like bombs.

Then there are the *hypophosphites*, which have given rise to several accidents. Without a thought of danger, a young pupil, in dispensing a prescription, rubbed up a mixture of $2\frac{1}{4}$ parts of hypophosphate of lime, $3\frac{1}{4}$ parts chlorate of potash, and $\frac{1}{2}$ part of lactate of iron. Suddenly the whole mixture took fire, and there was a violent detonation, scattering the *débris* in every direction. The young man received such severe burns that his life was endangered for several weeks. Although, no doubt, the chlorate of potash in this case was a potent factor, yet it is well known that trituration of hypophosphate of lime alone is very liable to cause explosion, especially if the temperature be at all elevated, and such explosions have occurred in various quarters. Furthermore, solutions of oxidising bodies in glycerin demand great care, and hav-

more than once led to violent explosions. Thus a mixture of *chromic acid and glycerin* has been recommended for affections of the mouth, &c., and dispensers should know that in order to avoid accidents the acid must be added drop by drop to the glycerin. The following mixture was ordered for external use—viz., 7½ grs. of chromic acid and 60 grs. of glycerin. The chromic acid was mixed with water in a flask, and the glycerin mixed with it by shaking. Suddenly the contents of the flask exploded with a loud report, flying all about the shop, while the vessel remained unhurt in the hands of the astonished apothecary, and was covered with a black mass. A similar accident happened with an apothecary of Mont-Dore.

Permanganate of potash likewise acts energetically upon glycerin, alcohol, ether, essential oils, gallic and tannic acids; and if carelessly managed will cause explosion or inflammation.—(*Rép. de Pharm.*, No. 11, 1874.) An unlucky apothecary attempted to dispense the following formula:—

Permanganate of potash,	-	-	10 parts
Alcohol,			
Distilled water,	}{ of each	-	15 "

Scarcely had the bottle been corked and put up when the liquid became so heated that an explosion took place, and the boiling fluid spurted into the face of the surprised pharmacist. He nearly lost the sight of one eye, and was disabled from work for more than a month.—(*Rép. de Pharm.*, Mars, 1875.)

It has been long known, as was pointed out in a former Report, that pills containing *oxide of silver and creasote*, or carbolic acid, or morphia, are apt to develop so much heat as to set fire to the box in which they are placed, and a lady received a formidable burn through carrying a box of such pills in her dress. With this phenomenon, doubtless due to rapid reduction of the oxide of silver, we may connect an accident which happened at New York by the addition of nitrate of silver to essential oil of almonds, with the object of eliminating from it hydrocyanic acid. The dangers which phosphorus presents are too well known to render necessary any allusion to the precautions to be taken in keeping and handling this metalloid.

Another substance which may be formed under certain circumstances is a violent detonating agent—viz., *iodide of nitrogen*. This compound is produced by the union of iodine, or chloride of

iodine, with ammonia, or carbonate of ammonia, or even by mixture of an alcoholic solution of iodine with liquor ammoniæ in excess, and a suitable quantity of water.

The following prescription is cited by Mr. Rice as having led to an explosion in the United States:—

Iodine,	-	-	-	-	-	15 parts
Comp. camphor linim.,				}	-	as 60 "
Soap liniment,						

The camphor liniment contains sufficient ammonia to account for the formation of iodide of nitrogen. The same writer mentions another prescription, which it was found impossible to execute:—

Ammoniated mercury,	-	-	-	-	grs. 20
Iodine,	-	-	-	-	grs. 15
Water,	-	-	-	-	a few drops
Lard,	-	-	-	-	1½ ounces

As soon as the two first substances were mixed and moistened with water detonation occurred. The relative rarity of explosion with formulæ of this kind is easily explained, because trituration is usually effected in presence of abundance of water which hinders such a result. The practical conclusion then is that when one has to deal with mixtures of tincture of iodine and solution of ammonia, small quantities only should be operated on at a time.

Chlorate of potassium, on account of its powerful oxidising properties, demands especial caution in combining it with other drugs. Its action upon hypophosphites has been already adverted to, and great care must be exercised in mixing potassium chlorate with sulphur, or certain metallic sulphides—e.g., sulphide of antimony. A mixture of potassium chlorate and tannin is likewise dangerous, and these bodies, when ordered in substance, should be put up separately. A dentifrice powder of catechu and potassium chlorate occasioned a violent explosion when rubbed up in a mortar, and even friction with a dry brush might possibly cause a detonation on a small scale in the very mouth of a patient. Chlorate of potassium and glycerin also constitute a dangerous mixture. Some time since a gargle prescribed by one of the most distinguished physicians in New York, and containing equal parts of potassic chlorate, perchloride of iron, and glycerin, exploded violently, not in the pharmacy, but in the messenger's bag. Another time a similar mixture exploded soon after its preparation under the influence of the solar rays, and set fire to the house.—(*Rép. de Pharm.*)

5. *Boracic Acid, uses of.*—Carbolic acid is doubtless of great value in the treatment of cutaneous affections, but it is a poisonous and irritant substance, especially in the case of young children. Boracic acid, an excellent antiseptic, is non-irritant, non-poisonous, and renders good service in the management of eczema—e.g., in the form of ointment:—

Vaselin,	-	-	-	-	25 parts
Boracic acid, porphyrised,	-	-	-	5	„
Balsam of Peru,	-	-	-	1	„

Or, the boracic acid may first be dissolved in an equal weight of glycerin, and the other ingredients added.

This ointment suits admirably in eczema and intertrigo.—(*Journ. de Méd. et de Chir.*, Avril, 1880.)

6. *Formulæ for Administration of Thymol.*—Dr. Alvin gives the following formulæ for using thymol in place of carbolic acid in caustic, alterative, or astringent applications to the mucous membrane of the throat. He has found these preparations much better tolerated, more agreeable, and quite as active as those of carbolic acid:—

Caustic.

R. Thymol Cryst.	-	-	-	1 part.
Glycerinæ Puræ	-	-	-	2-4 „
R. Thymol Cryst.	-	-	-	1 „
Iodinii	-	-	-	1 „
Potassii Iodidi	-	-	-	1 „
Glycerinæ Puræ	-	-	-	5-15 „

Alterative.

R. Thymol Cryst.	-	-	-	1 „
Glycerinæ Puræ	-	-	-	50 „
R. Thymol Cryst.	-	-	-	1 „
Iodinii	-	-	-	1 „
Potassii Iodidi	-	-	-	1-2 „
Glycerinæ Puræ	-	-	-	12 „
R. Thymol Cryst.	-	-	-	1 „
Tannin	-	-	-	1 „
Glycerinæ Puræ	-	-	-	100 „

Astringent.

R. Thymol Cryst.	-	-	-	1 „
Glycerinæ Puræ	-	-	-	500 „

Pastils.

(Useful in superficial stomatitis, irritation of the upper air passages, and erosion of the mucous membrane in smokers, and they are very useful in quieting spasmodic cough. They should be made trial of in whooping-cough.)

R. Thymate of Sodium	- 1 milligr. (gr. $\frac{1}{5}$)
Chlorate of Potassium	- 10 centigr. (gr. $1\frac{1}{2}$)

In severer forms of stomatitis, amygdalitis, pharyngo-laryngitis:—

R. Thymate of Sodium	- 1 milligr. (gr. $\frac{1}{5}$)
Borax	- - - 10 centigr. (gr. $1\frac{1}{2}$)

These pastils may be taken to the number of six to ten daily.

Thymol-vaseline Ointment is made by dissolving twenty grains of thymol in an ounce of vaseline. It is useful in *syphilis* and as a parasiticide.

Glycerole of Thymol.—The formula is: thymol, 20 grains; glycerin, rectified spirit, of each, an ounce; distilled water to 16 ounces. Useful in pityriasis, and, when diluted, as an effective antiseptic mouth-wash.

It is said that thymol has the property of immediately removing the smell of tobacco.—(*Pharm. Journ.*, 13th Dec., 1879, from *New Remedies*.)

A NEW SIGN OF DEATH BY STRANGULATION.

PROF. HERMANN TRIEDBERG, of Breslau, having previously shown that effusion of blood into the wall of the carotid artery is a valuable sign in cases of death by hanging, now demonstrates (in Virchow's *Archiv* of March 8, 1880) that the same sign is present in cases of death from throttling. He concludes, as the result of the examination of the bodies of two victims of violence, that strangulation exercised upon the living body may cause extravasation of blood in the wall of the carotid if sufficient force be exerted to rupture the *vasa vasorum*. Such force may not always be exerted, hence the extravasation will not inevitably be present, but when it is the sign is all important.—*St. Louis Courier of Medicine*, May, 1880.

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PART IV. MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

President—E. H. BENNETT, M.D.

Secretary—JOHN WILLIAM MOORE, M.D.

Aneurism of the Abdominal Aorta.—MR. THORNLEY STOKER said: The man from whose body this specimen was taken was a person whom Dr. Peele met in practice and placed under my care. He was an army pensioner, aged twenty-eight, who had been discharged six months previously. He was admitted into the Richmond Hospital on the 26th of November—that is, about two months ago. He was married, and had had syphilis seven years previously. He was spare, but not emaciated, sallow, and of rather a bloodless type. He had been discharged from the army on account of his having both aneurism and disease of the kidneys.

A very simple examination sufficed to show that the diagnosis of aneurism was correct. He had a large tumour which occupied the upper and left part of his abdomen, being situated in the epigastric, umbilical, and part of the left hypochondriac and lumbar regions. The walls of it were evidently rather thin and the pulsation very distinct. There was a loud bruit and a most characteristic distensile pulsation. It was so close to the diaphragm that all possibility of surgical interference was out of the question. With regard to the treatment of the aneurism I may say at once that any means that were attempted proved extremely unsatisfactory and could not be carried out. The man was only one or two days in the hospital when it was discovered that he was subject to intermittent mania. He required at times to be confined by means of a strait jacket, and all treatment by posture or diet was impossible; at times he could not be got to take even his medicine. Several plans were tried, but nothing could be carried out satisfactorily.

With regard to the supposed kidney disease more uncertainty existed. His urine, which was abundant and frequently passed, was of a persistently low specific gravity—between 1004 and 1005—and at no time

could we detect albumen. A few days subsequent to his admission he was seized with an epileptic fit. These fits then became common incidents of his case; he had generally several in succession, occurring from three to five times in the twenty-four hours, and they took place off and on during the whole period that he remained in hospital. Once he was as long as a week without fits, but at no other time were they so long absent. They lasted from two to five minutes, and resembled ordinary epileptiform seizures. Three weeks after his admission I visited him one morning and found that during a fit on the previous day he had sustained a partial loss of vision. Dr. FitzGerald made a careful ophthalmoscopic examination of his eyes, and found in them a number of retinal haemorrhages. There was no fatty degeneration of the retina, but the haemorrhages were such as are frequently seen in cases of albuminuric retinitis. There was now strong evidence that the diagnosis of disease of the kidneys by the military surgeons who discharged him had some grounds, for although the fits differed from ordinary uræmic convulsions in not occurring in groups of rapidly-succeeding attacks, yet the abundance and low specific gravity of his urine, and the occurrence of retinitis, pointed with some force to the existence of cirrhotic disease of the kidneys, and I expressed the opinion that he had that complaint, although it is true we very seldom find cirrhosis advanced to the stage of convulsions without some albumen in the urine. The man had a succession of eight or nine fits during the hours preceding his death, and in one of these he expired

on the morning of January 23rd.

A *post mortem* was made about ten hours after his death, with the following results:—The brain was in an abnormally hard, sclerosed condition, and the hardening was uniform, and not present at one point more than another. There was a little thickening and a milky appearance of the arachnoid. It was the most bloodless brain I ever saw—so much so that when I removed the viscera I thought my opinion about the existence of renal disease was correct. On examining the thorax I found the heart and its valves quite healthy. The right side of the heart was perfectly normal; the left ventricle was in a condition of hypertrophy such as exists in arterio-capillary fibrosis. I had then additional reason for thinking that the kidneys would be found diseased, but, on opening the abdomen and removing them, they presented a perfectly normal appearance. Dr. Abraham, curator of the Museum of the College of Surgeons, has since made a microscopic examination of them and found them quite healthy. There was slight cortical congestion—due, doubtless, to pressure upon the caval vein by the aneurism. The liver and spleen were healthy; and, in fact, there was nothing abnormal in the abdomen except the specimen on the tray—which includes the heart and aorta with aneurism attached—and the very large haemorrhage resulting from the bursting of the aneurism, and which had evidently caused

death. The disease commences immediately beneath the diaphragm, and extends considerably below the origin of the superior mesenteric artery. The posterior wall of the aorta had been thrown forwards from the spine by the extravasated blood. On laying open the aneurism an extensive deposit of laminated fibrin of the usual character is found on the front, sides, and upper part of the tumour. Below it is exceedingly thin, and has a multiple sacculated appearance. It had given way some days previous to the man's death, and he was in a dying condition for forty-eight or fifty hours before he expired; and it is evident now that he died from haemorrhage, occurring slowly into the sub-peritoneal tissue. The blood had not entered the peritoneal cavity, but formed a dense and extensive mass of coagula between the peritoneum and the posterior abdominal wall. The coats of the aorta present an appearance of extensive disease. They are of a yellowish-pink colour, and studded with yellowish spots and patches, like those which might be seen at the commencement of a case of atheroma. These spots have been microscopically examined by Dr. Abraham, who states that they are syphilitic, and in no way like atheromatous deposits. The upper part of the aorta was free from disease.

So far as I have been able to form an opinion as to the sequence of events in the history of the case it is this:—The man was an epileptic, and his fits were truly epileptic, that condition being independent of any arterial disease, except in so far as the seizures, by increasing the arterial tension, were an exciting cause of the aneurismal distension of an aorta already weakened by syphilitic deposit. The hypertrophy of the heart was secondary to the occurrence of the arterial disease.

Aneurism is a common cause of hypertrophy of the heart, and, in particular, of that very hypertrophy of the left ventricle which existed here. The retinal haemorrhages were a sequence of the hypertrophy of the heart. The hypertrophied condition of the heart and the frequent epileptic fits caused a number of ruptures of the retinal vessels, and produced a condition which during life I was disposed to regard as one of albuminuric retinitis.

The case is of interest, not merely as showing a good specimen of an aneurism of the aorta, and of natural effort to effect its cure under adverse circumstances, but also as illustrating the many difficulties of diagnosis which may arise in the clinical history of a case such as this. A *post mortem* examination served, I think, in a great measure to explain circumstances which were difficult to be understood during life; yet there is even now much food for thought in the details of this example of disease—in particular as showing the difficulties of diagnosis which may beset certain forms of Bright's disease. The history of the case during life—with the one exception of the absence of albumen from the urine—and even the disclosures of the cadaveric examination, until the kidneys

themselves were examined—all pointed at cirrhotic disease, and yet the kidneys were quite sound. The probable cause of the abundant secretion of urine was the paralysis of the vasomotor nerves of the kidneys by the pressure of the tumour.

DR. BARTON, during the discussion which followed, stated his belief that as the convulsions were not of renal origin they were probably due to pressure on the nerves in the neighbourhood of the aneurism exciting reflex phenomena. He also asserted his want of faith in syphilis as causing such a disease of arteries as existed here.

DR. FOOT said that he had been long convinced of the influence which syphilis has in diseases of the arteries, and especially in aneurism. He considered it a most important element in the etiology of the larger arteries. He referred to Dr. Stokes' case of the leaking aneurism, attended by violent epileptic seizures, the sudden haemorrhage from the aneurism producing the epileptic fit. In the present case he thought the polyuria was due to paralysis of the vasomotor nerves of the kidneys, which from the situation of the aneurism must have been pressed on, and thus the production of an abundant flow of urine of low specific gravity and without albumen would have been the result.

DR. FINNY did not think a leaking aneurism could have produced epileptic fits. He did not understand the hypertrophy of the left ventricle, nor did he accept Mr. Stoker's statement that aneurisms as a rule produce hypertrophy of the heart. According to Dr. Stokes, aneurisms as a rule do not lead to hypertrophy of the heart, even though they exist in close proximity to that organ.

THE PRESIDENT said that two points struck him in this case. One was, that the pathological appearances of the aorta here were those of deforming arteritis. It occurs in the part of the aorta where we commonly see it—namely, close to the upper part of the abdominal aorta, below the diaphragm. One would suppose, if this were syphilitic disease, that we should get evidence of it in the upper part of the aortic wall; but if syphilis does not localise, deforming arteritis does.—*January 31, 1880.*

Greenstick Fracture of the Bones of the Forearm.—DR. E. H. BENNETT, in exhibiting this preparation, said: The interest of this specimen is that, while it exhibits a most perfect example of "greenstick fracture," it establishes the fact that this injury can occur in the adult; it also shows the amount of additional injury inflicted in the reduction of the fracture during life. Three fractures have taken place—two in the radius, and one in the ulna. The ulnar fracture is placed two inches from the wrist, and to it the lower of the radial fractures corresponds; the upper radial fracture is placed above the centre of the shaft. The radial fractures are both still incomplete, the upper most markedly so, the rough surface

which attaches the tendon of the pronator teres muscle exhibiting no trace of fracture, although the bone, here naturally convex, has become concave. On the anterior aspect, and directed towards the interosseous space, a deep fissure occurs in the bone. The lower radial fracture passes through all but the most prominent portion of the dorsal surface; motion can be produced by moderate force in the upper fracture; the lower is quite fixed; the natural curves of the radius are reversed at each seat of fracture. I have already noticed that of the upper; at the lower the anterior aspect of the bone is convex, the posterior concave. The ulnar fracture—irregular, jagged, with the fibres, so to name them, of the bone bent and interlocked—is complete, and moves freely, but the fragments cannot be replaced, the upper projecting forwards. A great extent of the periosteum of both bones is completely detached. The epiphyseal lines can just be detected at the wrist, but their obliteration is all but complete. The man from whom the specimen was obtained was aged between twenty and twenty-one years, a powerful labourer, for several years working as a corn porter. He was passing a horizontal machinery shaft in motion in a corn store, and seeing that a piece of thin rope had been fouled on the shaft, he incautiously attempted to catch and pull it off; the reverse happened, for it caught his wrist, and twisted him right off the ground, and over the shaft. He was shortly after carried to Sir P. Dun's Hospital, where the distortion of the forearm was at once recognised as that of "greenstick fracture," the twisted curves of the bones being permanent, and not yielding crepitus. In addition the humerus was broken high up, and projected through a wound close to the floor of the axilla; the posterior fold of the axilla was excoriated, and had evidently suffered great traction; there was no haemorrhage of any consequence from the wound, and the vessels of the arm pulsated normally. I reduced the fractures of the forearm as completely as possible by pressure across my knee. During this process I completed the ulnar fracture, and forcibly straightened those of the radius to a great degree, although I did not, as the specimen shows, succeed in removing the normal curves. The progress of the case was fairly satisfactory for some days, although a rapid pleuritis, with effusion on the injured side, caused considerable anxiety. On the sixth day, after the wounds had been dressed, a sudden gush of arterial haemorrhage from the dressings was observed; the bleeding was controlled by pressure on the subclavian and axillary arteries, but much blood had been lost. I extended the wound, and after a troublesome search secured the brachial vessel above and below a wound in its posterior wall. The result was, however, unfavourable, for the patient sank rapidly, gangrene of the limb having commenced before death. The specimen, I have said, demonstrates that a "greenstick fracture" can occur in the adult, for a man of the age and build of my patient

must be so regarded, even though the epiphysary line can be still traced. The fractures are similar to those of the forearm exhibited to this Society by Professor R. W. Smith (April 22, 1871), being incomplete fractures, for, as has been shown by Professor Smith, such injuries occur both as complete and incomplete fractures.—*January 31, 1880.*

Ascites ; Paracentesis Abdominis ; Erysipelatous Peritonitis.—DR. NIXON said: The case which I bring before the Society is interesting in many points of view, not the least in the occurrence of an accident for which perhaps I may be in some degree responsible, and which certainly affords a useful lesson of caution in the future under similar circumstances. During the absence of my colleague, Dr. Hayden, from duty at the hospital I saw one of his patients, who was admitted suffering from ascites and oedema of the legs. Some weeks before admission his abdomen became swollen, and subsequently his legs. He had had no pain of any description. He never had vomiting, but had suffered from diarrhoea, with tenesmus, and had a tendency to haemorrhoids. He complained greatly of flatulency. His habits had been most intemperate. When asked "did you drink much?" he replied, "always as much as I could get, principally porter." His tongue was clean; there was no jaundice. The condition of the heart and lungs was normal. The urine was passed in small quantity; specific gravity, 1025; it contained a large amount of lithates, and was free from albumen. There was a very large amount of fluid in the cavity of the peritoneum. It could not be ascertained that there was any enlargement of the spleen. The lower limit of hepatic dulness could not, of course, be ascertained. The upper limit in the mammary line reached the fourth intercostal space. In employing the direct method of fluctuation, it was ascertained that the liver came below the margin of the ribs in the hypochondriac region, and considerably below the normal limit in the centre line of the abdomen. The organ was extremely dense and resisting. There was no very marked marbling of the abdominal wall. The history of the man's habits, the occurrence of ascites without jaundice, the aspect of the patient, and the general history of the case, suggested the view that it was one of cirrhosis of the liver. It remained to be explained why the liver was apparently enlarged, and why there was no enlargement of the spleen. The latter was accounted for in two ways—the draining of the portal system by the ascites, and the cirrhotic disease probably existing also in this organ. It was then necessary to account for the enlargement of the liver. The possibility of malignant disease was entertained and dismissed, as the aspect of the patient, the history of the case, and the signs that existed, seemed to negative that view. In discussing the case with the Hospital class, the question arose as to the precise condition of the liver, and the existence of one of three conditions was presumed—hypertrophic cirrhosis, cirrhosis of

enlarged fatty liver—if such a circumstance occurs—and, lastly, the case being one of cirrhosis of the liver, with anteversion of the organ. The last view was entertained from reading the notes of a case recorded by Murchison, where anteversion had occurred, and had led to an error of diagnosis. It is unnecessary to discuss the medical treatment adopted. As is usual in such cases, diuretics had no effect. The patient complained of great distress when lying down in bed, and he suffered very much from flatulence. On one occasion I was sent for at night to see him. He was then suffering from extreme pain in the abdomen, apparently of a colicky nature. It was entirely relieved by an enema of assa-fœtida, a carminative draught, and some hot brandy punch, and on the following morning the patient was in his usual condition. This was the first time he had ever suffered from pain. Two days afterwards, yielding to the patient's urgent solicitations, I tapped the abdomen in the usual place, having first divided the integument with a Syme's knife. There is no reason to think that the knife or small trocar and canula used could have been a source of infection.

The fluid drawn off amounted to several quarts. It had the usual physical characters of ascitic fluid in obstructive lesion of the portal vein, being straw-coloured, perfectly clear, sp. gr. 1015, albuminous, and free from blood or lymph. The patient experienced great relief after the operation. The outline of the liver could now be ascertained with ease. From the great relaxation of the abdominal wall, I could with facility pass my fingers under its edge, and raise it upwards, so as to distinctly feel its hard gristly margin. The under-surface was found to slope upwards very obliquely, thus affording some grounds for the view entertained of the organ being anteverted. The surface of the liver was distinctly irregular, dense, and resisting to the touch, and towards the extremity of the left lobe a hard irregular nodule was felt on the upper surface, which gave rise to very great doubt as to whether or not cancerous disease of the organ existed. For the reasons before mentioned I felt inclined to adhere to the original diagnosis of cirrhosis with partial displacement, though the possibility of the nodules felt being due to cancerous deposition was mentioned by me to the hospital class. After the tapping my resident put on a pad of lint and some sticking-plaster over the site of the puncture. The man felt greatly relieved. A few hours after the tapping the pad of lint came away, and there was a free welling of serous fluid from the cavity of the peritoneum which saturated his bedclothes. The resident was sent for and readjusted the pad. After this I was away from the hospital for some time, and only know the further particulars of the case through the resident. When Dr. Hayden saw the man he was complaining of pain in the region of the umbilicus. There was well-marked swelling and redness here of a circular form, about the diameter of an inch and a half. Shortly

afterwards he complained of a diffuse tenderness over the abdomen, which was so great that he was unable to bear even the weight of a poultice. The red surface corresponding to the umbilicus gradually increased in size until it attained the diameter of two and a half inches. He then suffered from vomiting, and it became quite evident that he had general peritonitis, to which he succumbed a week after the operation of paracentesis.

It is necessary to mention, in connexion with the condition of the wound, that, a couple of beds away from this patient, there was a patient who was suffering from cardiac dropsy depending on a weak and dilated heart; and, to relieve the dropsy of his legs, I tapped them by means of one of Southey's trocars. Some time afterwards the patient had an attack of erysipelas, starting from the site of the puncture. From this attack he was recovering at the time I tapped the patient for ascites.

In making the *post mortem* examination the first thing that struck me was the presence of a hard indurated mass, corresponding to the site of the puncture, in the abdominal wall. On carefully dissecting this we found that it consisted of an abscess which contained a quantity of thick yellow pus. This abscess was between the peritoneum and the abdominal wall; and corresponding to the peritoneal surface of the abscess was a large quantity of recent lymph, the inflammation extending from this focus all over the peritoneum. The intestines were matted together as in the ordinary cases of acute peritonitis. The liver presented a strange aspect. It was considerably anteverted. There was a large amount of perihepatitis involving the right lobe, which was intimately bound to the under-surface of the diaphragm, and this would seem to have brought about the displacement. The left lobe of the liver presented a very extraordinary appearance. On examining the under-surface of the organ we found what is a very unusual complication in cases of cirrhosis—namely, distinct tubercles of an apparently scirrhouous character. They had all the aspect of Farre's tubercles, and on section were extremely dense and hard. Moreover, on cutting into the right lobe of the liver, I found a considerable infiltration of what appeared to be scirrhouous cancer. The spleen was somewhat enlarged, and seemed to be in an early stage of cirrhotic change; the capsule was considerably thickened, and very rough on the surface. The heart presents no abnormal change. I found one of the glands to the right of the trachea in a condition of advanced caseous degeneration. It was considerably enlarged, and surrounded by a shell of calcareous matter, and, when cut through, a quantity of yellow creamy matter flowed out. I think the case affords a great lesson of caution in tapping the abdomen whilst erysipelas is prevalent or proximate to the patient.—*February 14, 1880.*

Mitral Regurgitation ; Hæmorrhagic Infarctions of Lungs and Spleen.— DR. NIXON said : I know nothing of the history of the case from which these specimens were taken, but as they present appearances with which we are familiar in an unusual degree, I thought it well to exhibit them to the Society. They consist of the viscera of a young girl, aged twenty-five, who was under the care of my colleague, Dr. Hughes, in the Mater Misericordiæ Hospital, and was suffering from heart disease. Three months ago Dr. Hughes saw her at his own house, and she was then affected with a very severe form of anæmia, but had no physical signs of disease of the heart. A fortnight ago she presented herself at the hospital, suffering from general dropsy. On examining her heart I found a very loud systolic murmur at the apex, sufficiently loud to be heard at almost any part of the chest, the point of intensity being, however, at the mitral area. The patient complained of great difficulty of breathing. She had repeated attacks of hæmoptysis, in a very severe one of which she died. The portion of the lung before you shows very well-marked hæmorrhagic infarctions of an extensive character. The site of the endocarditis which existed in the case is unusual, being almost confined to the interior of the left auricle. The patches of villous exudation exist quite apart from the auriculo-ventricular valves. The latter are considerably engaged, a large quantity of recent lymph being found upon the edges of the valves. The appearance of the spleen is a remarkable one. Its surface is irregular, and it presents distinct evidence of perisplenitis. On section it shows exceedingly good examples of the triangular hæmorrhagic infarctions undergoing the usual caseous change. The upper portion of the organ is the seat of a very large infarction, which has undergone this change in a marked degree.—*February 21, 1880.*

Hypertrophied and Dilated Heart ; Cheyne-Stokes' Respiration.— DR. NIXON said : The viscera which I desire to exhibit were taken from the body of a man, aged apparently sixty, who had been admitted into hospital on the 14th inst. in a dying condition. The patient was in a drowsy state, almost unconscious, so that no history of his illness could be obtained from him. He had general dropsy, oedema of both legs and of the eyelids, and ascites. Sonorous and sibilant râles were heard over the chest. There existed a very marked increase of the area of cardiac dulness in the transverse direction ; a distinct double impulse was felt about $1\frac{1}{2}$ inches below, and in a vertical line with, the left nipple ; the second impulse was of so distinctly a retractile nature as to suggest the idea of adherent pericardium. The sounds of the heart were free from murmur, the first being loud and accentuated. Whilst observing the patient during sleep it was found that his breathing presented in a very marked degree the characters described under the name of Cheyne-Stokes' respiration, or ascending and descending breathing, the period of apnea usually

lasting ten or twelve seconds. As is, I believe, usual, the ascending scale terminated in what appeared to be a painful gasp, sometimes so violent as to waken the patient. It was noticed that the pulse varied in frequency during the paroxysm, becoming quickened during the period of apnoea—a circumstance in accord with the observations of Dr. Reid upon this condition. The ordinary rate of the pulse was 92 in the minute. In the absence of any history of the case it was difficult to make any positive diagnosis, but the question that suggested itself was—Had the patient a hypertrophied heart from renal disease? The urine was passed involuntarily, and could not be obtained for analysis. The patient died comatose two days after his admission. The *post mortem* examination disclosed the following points:—There was a considerable amount of ascites. The liver and spleen presented the appearances found in cases of cirrhosis from prolonged venous congestion, the result of heart disease. The kidneys are good examples of the cirrhotic form of Bright's disease, being irregular on the surface, distinctly granular, and the capsule considerably thickened and adherent to the cortex. The latter is very much diminished in size, and the usual red appearance of the medullary portions is shown. Both lungs are distinctly oedematous, exhibiting the sodden condition usually found in Bright's disease when attended with dropsy. The heart is generally hypertrophied, the left ventricle especially so; its cavity is very much increased in size, and the walls at the base at least twice their normal thickness. The right side of the heart is dilated and hypertrophied to an extreme degree.

All the valves are perfectly sound, those of the aorta being free from deposit and perfectly competent. There is a very small amount of atheroma in the aorta near its root, but not sufficient to impair the elasticity of the vessel, and for an old man the aorta may be regarded as remarkably healthy. The starting point, I should say, of the cardiac disease was the cirrhotic change in the kidneys. Whether, in addition to this cirrhotic change, a fatty change also exists, I am unable to say, as I have made as yet no microscopic examination of the organs. The occurrence of general dropsy would suggest the idea that the kidneys had also undergone this change, as dropsy in a case of cirrhosis of the kidneys is the exception. In connexion with the double impulse which existed, I may mention that the case bears out the view that this double impulse is due to a dilated and hypertrophied condition of the left ventricle, especially when the muscular fibres of the ventricle have not undergone any degeneration. My colleague, Mr. Coppinger, kindly made a microscopic examination of the structure of the muscular tissue, and found it almost entirely free from fatty change. The remaining point of interest is the occurrence of the Cheyne-Stokes' breathing. I do not think anything in the condition of the heart exhibited bears out the views generally entertained as to the cause of this symptom. This

is not a fatty heart, nor does the opinion entertained by my colleague, Dr. Hayden, appear to be sustained by what has been found. Dr. Hayden holds that Cheyne-Stokes' breathing is always associated with a dilated condition of the ascending part of the arch of the aorta which has undergone an atheromatous change, and has, in consequence, its elasticity greatly impaired. However, the condition of the aorta here does not accord with this view. We must, I conceive, look to conditions quite apart from disease of the circulating organs to explain this peculiar form of breathing. As you know, sir, Cheyne-Stokes' respiration has been found in different conditions distinctive from any lesion of the heart. Von Dusch mentions that it has been observed in cases of cerebral meningitis and cerebral tumours. In one case recorded the only abnormality found was some deposit on the roots of the pneumogastric nerves. It has also been observed in cases of typhus fever. So that where this form of respiration is met with we may possibly have to look for the cause of it in a diminished excitability of the respiratory centre. It may be that in such cases a chronic venous congestion of the nerve centres leads to a less active nutrition of the ganglionic cells in the medulla, which impairs and deranges their function, and thus produces "ascending and descending breathing."—February 21, 1880.

Enucleation of Eyeball for Panophthalmitis.—DR. J. B. STORY said: This specimen, which was removed by Dr. A. H. Benson in St. Mark's Ophthalmic Hospital, presents some points of both pathological and surgical interest. The patient, a man aged fifty-seven, was admitted into the hospital on March 5. On the day before he was holding a set, which another man was striking with a hammer, when a piece of metal, either from the set or the hammer, flew into his right eye, causing a vertical incised wound of the lower lid, and making a crescent-shaped wound in the sclerotic. The metal remained in the eye. The accident caused him great pain, considerable loss of blood, and dulness of vision in the eye. He came to the dispensary on the afternoon of the injury. The tension of the eye was —3. The edge of the piece of metal was visible through the sclerotic about two or three lines from the corneal margin at the inner side. The optic disc was normal, and the power of vision = $\frac{5}{6}$. Dr. Benson removed the metal with a small forceps, having to cut the conjunctiva in order to catch hold of it. The breadth of it was such that it must have penetrated not only the sclerotic, but also the choroid and the retina. When the metal was removed, the vitreous humour came through the wound. The patient refused to remain in hospital. The pupil contracted, and he was sent home with a cold water dressing. He came back the next day, and said he had had hardly any pain since the removal of the piece of metal. When we examined the eye with an ophthalmoscope, we saw a number of thread-like opacities in the vitreous

humour, and in the lower and inner portion of it were two small, well-defined bodies, which we considered to be pieces of metal. These were very far forward in the vitreous humour close to the lens. We had no means of removing them at that time. This was on the evening of the 5th. It was not until the morning of the 7th that we were able to procure a suitable magnet, formed on the model of Dr. M'Keown's instrument for removing metal from the eyeball; and when we made an examination, the foreign bodies had disappeared, the vitreous was tolerably clear, and the disc plainly visible. We, therefore, gave up all attempts to remove them, and treated the eye with a cold water dressing. Up to that time the patient had no pain or trouble. Next morning, however, the vitreous became turbid, and opacities were seen moving about in it more freely. On the morning of the 9th his condition was much worse. He was suffering from great pain, and had only a bare perception of light in the eye. When we examined the organ with the ophthalmoscope, we found the vitreous still more turbid than on the previous day. The man had to be given hypodermic injections of morphia to relieve the pain. Next morning there was chemosis of the ocular conjunctiva, and a yellowish reflection from the lower portion of the vitreous. We came to the conclusion that it was better to enucleate the eye at once, which was done by Dr. Benson on the morning of the 10th. On an examination of the eye after the enucleation, the anterior chamber and the cornea were found to be normal; the retina was also normal. The vitreous was full of a turbid, whitish substance, which, on microscopical examination, was found to consist of pus cells and a few red blood corpuscles. The retina was easily removed all round from the choroid, except at the place where the wound was—retina, choroid, and sclera being adherent at this point. Beyond the pus in the anterior portion of the vitreous, there was nothing pathological in the eye; and, in spite of the most careful search, no foreign body could be detected. I still believe that there was a foreign body in the eye, as I do not think the wound of the sclerotic was sufficient to set up panophthalmitis without the presence of some foreign body in the eyeball itself. In the retina were a number of minute haemorrhages, but they were produced, I believe, during the process of enucleation. The case is interesting, because the eye was enucleated for a foreign body, which, when the globe came to be examined, could not be discovered; and yet, from the history of the case and the ophthalmoscopic appearances, there is what we may call a moral certainty that the foreign body was in the eye. At the time of the operation the man had only the barest perception of light and darkness. He could tell when a bright light was thrown into his eye, but nothing more than that. If I had examined the retina microscopically, I might have found evidences of suppurative changes in it. There was no implication of the other eye. I agree with a suggestion made by Dr. Purser

that panophthalmitis might have been set up by bacteria introduced on the foreign body, but I am almost certain that what I saw myself were foreign bodies. There were two of them; one was a small, triangular, flat-looking object, which had a slight metallic glitter. It was very far forward, and close to the posterior capsule of the lens, so that it could be easily observed; and what it could have been but a foreign body do not know, as it differed totally in appearance from the other opacities due to blood and lymph. I am still of opinion that the injury was a very slight one to have caused panophthalmitis. A short time ago a case came under my notice of a man who received an accidental stroke of a knife in the eye, which cut the cornea from edge to edge, and went right through the lens to the vitreous, which came out through the wound; and yet that man is now walking about, able to see with the injured eye.—*March 13, 1880.*

Patent Foramen Ovale.—DR. WALTER SMITH said: This heart presents some features of interest, particularly the extreme patency of the foramen ovale, without any symptoms having been exhibited during life which would have led one to suspect such a condition. It belonged to a fat woman, aged sixty, who was under my care in the Adelaide Hospital in 1879 for dropsey, associated with the ordinary evidences of mitral valve disease. She went out relieved, and having remained out for some months, was re-admitted a few weeks ago in a state of extreme anasarca, ascites, and urgent dyspncea. Her hue was then purplish and cyanotic. The action of her heart was irregular and tumbling, and there was at the apex a loud systolic murmur. Her pulse was weak and intermittent. The case was diagnosed as one of mitral regurgitation, with the usual sequelæ. She became worse, sank into a lethargic state, and finally died comatose. On the *post mortem* inspection many quarts of fluid were found in the abdomen, and the peritoneum was extensively mottled by a black pigment. The omentum was of a dark, slatey-gray colour, and the intestines were healthy. The spleen was firm, but deeply pigmented. The liver was nutmegged and congested, but otherwise healthy. There was nothing remarkable about the brain, nor in the lungs beyond a condition of intense congestion, especially on the right side. The longer axis of the pericardium measured ten inches, and yet the bag of it contained only a few ounces of serum. The heart was extremely large, and on being emptied of blood, weighed 26½ ounces. It was excessively flabby in its recent state, and the muscular tissue was soft and pale; and when examined under the microscope, presented, in a very marked degree, granular fatty degeneration—in fact, few healthy fibres could be detected. All the cavities were greatly dilated. The tricuspid valve admitted my five fingers; it was extremely patulous, and the curtains of the valve were thickened, and presented evident traces of disease.

Yellow thickened nodules ran up the valve, and extending up the pulmonary artery also were tolerably well-marked yellow patches. The right auricle was extremely dilated, and when the auricle was opened the condition of the foramen ovale attracted attention. It was patulous to the extent of admitting two fingers almost entirely, and the thumb freely. The valvular septum is cribriform. The left ventricle and cavities of the heart were hypertrophied and dilated, and the mitral valve presented the condition that might have been expected from the signs observed during life—namely, a state of insufficiency, with thickening and puckering of its curtains, and patches of atheroma on its ventricular surface. The pulmonary artery, when split open, measured four inches across, and the aorta three, these measurements being in excess of the normal dimensions. The chief points of interest are the existence of evidence of disease on the right side of the heart and in the pulmonary artery; and more particularly this heart adds another to the tolerably numerous examples of patency to a considerable extent of the foramen ovale, without cyanosis during life. In that respect the case belongs to the class of malformations of the heart without external symptoms. There was no narrowing of the pulmonary artery, which is the most frequent cause of patency of the foramen. The patency in this case was, I think, plainly due to arrested development. It will be seen that there is an imperfect development of the valve curtain. In the "Transactions of the Pathological Society of London," several instances are recorded of widely patent foramina ovalia unattended with cyanosis during life, but they all occurred in children under sixteen. This woman had arrived at the age of sixty, with a state of heart that must have admitted of the mixture of the blood of the right and left cavities of her heart. Her sex is a point of interest, as experience has shown that instances of defective development of the heart are much more common in males than in females.—*April 17, 1880.*

Phthisis Laryngea.—DR. WALTER SMITH said: This is a specimen of laryngeal disease. It was at first considered to be a case of syphilitic disease of the larynx, but on a *post mortem* examination it became manifest that the disease was phthisical. The specimen is from a man, aged forty-five, who was admitted into the Adelaide Hospital, under the care of Dr. Little, last January, and to him I am indebted for opportunities of examination both *ante mortem* and *post mortem*. He was in good health up to the summer of 1879, when he caught a cold which attached itself to his throat, and was followed by cough, expectoration, and other symptoms of phthisis. While he was in the hospital there were well-marked signs indicating extensive consolidation and excavation of the lung. He suffered great pain, and tenderness of the throat and extreme dysphagia, and was always beseeching to have something done. At no

time were there any marked symptoms of laryngeal disease. I examined him on several occasions with the laryngoscope, and detected considerable destruction of the right border of the epiglottis; and the mucous membrane over the arytenoids was so swelled as almost to occlude the glottis. The cords were both nearly destroyed. He died on the 28th of March. The difference of the disease from advanced syphilitic disease of the larynx is obvious. The contour of the epiglottis is changed by the development of an extensive ulcer on the right border, and the whole surface of the larynx and trachea is eaten away. The cartilages were exposed, and were undergoing necrosis, and the cords were almost unrecognisable. It was particularly noticed that, in the recent state, there was no cicatrix, and this attracted my attention, because I had made a *post mortem* in a case of syphilitic disease of the larynx, in which the narrowing and puckering of the mucous membrane were very well marked, and the right bronchus was so narrowed that it would scarcely admit a No. 10 catheter, while immediately behind that point the tube was of its normal diameter.—*April 17, 1880.*

Disease of the Knee-Joint.—DR. E. H. BENNETT said: This specimen I show, not on account of any novelty in the actual disease, which is very familiar, but for certain clinical phenomena connected with it. It is an example of destructive disease of the knee-joint which I removed by amputation yesterday. The patient was a married woman of nearly fifty years of age. She had suffered from disease of the knee-joint for between two and three years. The disease was peculiar, for she was able to walk about and flex the joint with comparative painlessness. She was treated both privately and in public by various surgeons and physicians, and her knee had been cupped several times, and bore the marks of a great variety of treatment. Last summer she walked into the hall of Sir Patrick Dun's Hospital without either help or support of any kind. On looking at the joint it was at once evident that it was the subject of synovial disease; below the level of the head of the fibula, and a considerable space down the calf of the limb, was occupied by a large abscess. A projecting area of skin, the size of a crown-piece, was raised, covering the abscess, which had already sloughed, but there was no escape of fluid. It is hard to believe that with an abscess of this size, communicating with the knee-joint, the woman could walk about and stand on the limb. The history of the case is obscure; and it is very hard to determine, from any previous facts stated by her, what the primary disease of the joint was. At all events the existence of suppuration around and within the joint was a remarkable condition to observe in a patient walking about and able to use the limb without pain. The abscess was opened under antiseptic precautions, and for weeks matters went on without any marked phenomena. It became apparent that there

was progressive caries of the joint, and a probe detected the dead bone. As she lay in bed after some weeks the joint became extremely painful, changing from a type of painless disease to one of extreme pain. She lay in bed refusing all assistance until yesterday. More than three months ago we recommended amputation, but she peremptorily refused her consent to it, and would have gone on refusing but for the influence of her daughter. The condition of the joint, however, shows an amount of destruction quite out of proportion with the symptoms she complained of at first. We have a hollow of great size in the tibia, which shows an extent of erosion from caries which must have been very long in action. A quantity of sequestra, too, are passing out of the joint. Down through the abscess grains of bone passed, some of which escaped, while others remained; and we have them in every stage of transit. The condition of the joint is such that it is impossible to say what the starting point of the disease was, but the extent of disease and destruction proves that the caries must have existed while the patient was able to bear weight on and to use the limb without even the support of a stick.—April 17, 1880.

Membranous Croup; Tracheotomy.—MR. THOMSON said: Between three and four weeks ago a child, aged fourteen months, was admitted into the Richmond Hospital suffering from symptoms of croup. I was sent for immediately, and on examining the child I saw that the case was one of extreme urgency. I therefore had a consultation with my colleagues, who kindly came over, and the majority of us determined that the case was a suitable one for operation. The child presented the usual symptoms characteristic of stenosis of the larynx, there being great impitting of the epigastric region and indrawing of the intercostal muscles, with the usual condition of attendant fever, with extremely rapid pulse. On examining the child's fauces, I observed a membrane which had extended to the soft palate. An operation was performed within an hour or so after I saw the child. We used chloroform, which I had latterly found to be the most suitable in such cases. There was not any difficulty in getting into the trachea; scarcely any blood was lost; and the condition of the child was considerably improved after the operation. All went well during the night, the respiration decreased in frequency, and the child took nourishment. About eight o'clock in the morning, however—as I learned from the resident pupil who had been sitting up with the child—after the patient had been sitting up in bed, drinking milk and apparently quite well, it suddenly fell back and died without a struggle. At the *post mortem* we had an opportunity of seeing the condition of things. We have here a portion of the root of the tongue. The specimen has been lying in spirit for some time, and probably some of the membrane has been washed away, but we still have membrane above

the epiglottis, which is coated with membrane, as are also the base of the tongue and the side parts of the pharynx. On opening the larynx we found it to be almost completely blocked up; no trace was detected of the vocal cords. Lower down in the trachea itself there are still some traces of the membrane, and we see a forked impression in the exudation, evidently made by contact of the lips of the bivalve tube which was used. The membrane gradually thins and becomes pultaceous as we get down to the bronchi. In the whole line of the air passage from the artificial opening we had made down there was no sign of obstruction to account for the sudden death of the child. As far as the bivalve tube itself was concerned, all was quite free and sufficient for the purpose of respiration. The lungs contained a considerable amount of air at the time of the examination, but have now lost that condition.

It is quite obvious, however, that a very fair amount of air had been passing through the lungs. In the heart we found a very considerable clot, extending downwards from the right auricle through the opening into the right ventricle, and also passing upwards into the pulmonary artery. The clot is very typical as to colour and consistency, and a question arises as to its age. Was it formed immediately after death, or immediately before it, or when? Further, had it anything to do with the death of the child? Whether that was so or not, I have not been able to find any cause in the air passages to account for the sudden fatal result. There was also a clot in the left side. The specimen is of interest in two ways:—It raises a question as to the position in which the membrane occurs in the two diseases of diphtheria and croup, and also the question as to whether those two diseases are not one and the same condition. Here we have, according to some authorities, a typical case of diphtheria; on the other hand, authorities are sufficient, both in number and eminence, who maintain that this croupous membrane may not only occur in the larynx and trachea, but, beginning there, may extend up to the pharynx itself. I do not know whether or not the question of surgical interference in a case of this kind is one that can be discussed here; but most of my colleagues as well as myself were of opinion that whether the disease be diphtheria or croup, where you have distinct stenosis of the larynx—as was the condition here—the opening of the trachea does not lessen the chance of the child's existence, whatever it may do to promote its chance of life, while at the same time it gives immediate and immense relief to the symptoms. I should add that I performed the high operation, as I have invariably done, with but one exception, in all cases of croup. The facilities for opening the trachea at the upper part, above the isthmus of the thyroid, are so great—especially in the case of a young child of twelve months old—that they commend that position to the operating surgeon. The advantages of opening the trachea at a lower point, including the possibility of getting

below the membrane, are extremely slight. In two cases I had that were successful I removed membrane from the trachea below the line of incision, so that, even if I had made the opening below the isthmus, I should not have been able to get below the line of the disease.—April 17, 1880.

Silent Caries of Foot.—DR. BARTON said: This is a foot which I think will be found to be of some surgical interest. It was taken by Syme's amputation from a lady aged forty-seven, who, in June, 1873, met with an accident. As she was stepping from a bank two feet over the ground she slipped and fell, hurting her right foot, which turned under her. She fainted from the effects of the fall, but was able to be assisted home in half an hour. There was no fracture, but the injury to the foot caused considerable pain and swelling, which came on soon after the boot had been taken off. She consulted a medical man, who applied lotions, but the swelling and pain remained. After six weeks she came to town and had the foot examined. The surgeon who saw it said that some of the bones were affected, and recommended painting with iodine. Four months subsequently the swelling had considerably subsided. During all this time the patient was entirely laid up and unable to put her foot to the ground, and never left the house except for a drive. In January, 1874, six months after the accident, she was recommended by her medical attendant to force herself to walk, as he looked upon it as a hysterical foot. She obeyed his advice, but after some weeks the pain and swelling returned, and she was obliged to give up walking. She was then recommended a wooden leg, by which the foot could be held up, but was unable to use it. Her general health had during this time been deteriorating, owing to the pain she suffered and the confinement she was subjected to. In 1875 she went to London, and consulted Mr. Erichsen, who said the bones of her feet were diseased, and recommended perfect rest. The disease appears to have lingered on for years after that. The next report about her was that in 1878 (during the whole interval she was an invalid and unable to walk) her foot was blistered, and bandages and a lead lotion applied, but this treatment only seemed to make her worse. Then a plaster-of-Paris splint was applied to secure rest for the foot, but nothing did her any good. When I saw her about six weeks ago the question put to me was whether the foot should be amputated or not. On examining it I found that it measured exactly one inch more round the instep than on the other foot. A tender spot on the inner side corresponded to the internal cuneiform bone, but there was no sign of past or present suppuration whatever, although seven years of pain and lying-up had exhausted her. The pain was not quite bad enough to prevent her from walking, but her general health was greatly broken down. She had no organic disease, but was in a very

deteriorated condition, her nutrition being evidently much impaired. I advised amputation of the foot, as I was convinced that not only her comfort, but the prospect of her future health, were rendered nil by the existence of the diseased foot. I accordingly removed it by Syme's amputation. On examining it we found the superficial tissues, muscles, tendons, and fascia in a perfectly natural state and containing no sign of suppuration. The astragalus was perfectly healthy on the upper surface, although anteriorly there was a slight erosion of the cartilage; but the articulation with the scaphoid was healthy. The astragalus is perfectly sound as far as the bone goes, and the articulation between it and the os calcis is healthy. The os calcis is natural, but at the articulation between the os calcis and the cuboid there is a slight abrasion. The scaphoid is healthy on both posterior and anterior surfaces, but on arriving at the cuneiform bones we found the seat of the disease. Between the middle and internal, and between the middle and external cuneiform bones we found abundant evidence of caries, which had eaten into the bones and destroyed the cartilages, but it is almost confined to the joints of the middle of the foot between the external and the middle cuneiform bones. It does not go forward to meet the tarsal bone, or backwards to meet the scaphoid; the cartilages are removed, and the bone is soft and carious. This disease, confined to the two articulations, appears to have been the cause of the whole trouble. It is interesting as an example of what may be termed *silent caries*. There was a certain degree of oedema and thickening of the tissues, but nothing of effusion. It reminds one of the silent necrosis described by Paget, which may go on for years without producing any suppuration—precisely as took place in this case.—April 24, 1880.

PREVENTION OF SCARS OF SMALLPOX.

SPEAKING of the various methods suggested to attain the above object, Dr. Alonzo Clark, of New York, states (*N. Y. Med. Rec.*, May 8) that the use of collodion blackened with animal-black is quite as good a method as any of them. The animal-black gives a very fine powder, and, mixed with the collodion while the collodion is soft and then applied with a brush all over the face, it adheres very well. And this, it is believed, will act in a way to cause abortion of the pustules upon the part to which it is applied. It will not do to apply it to any considerable part of the body, but the face is most important, and it is applied only to this part.

THE BOSTON
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SESSION 1879-80.

President—PROFESSOR DILL, M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

April, 1880.

PROFESSOR DILL, President, in the Chair.

Respiratory Excitation and Depression. By R. J. ANDERSON, M.D., M.A.; M.R.C.S., Eng.; Demonstrator of Anatomy, Queen's College, Belfast.

AUTOMATIC respiratory actions have their origin in the medulla and spinal cord. In the former the respiratory bundle is a cord 1 mm. in thickness, which consists of varicose nerve fibres, and is united at its origin with the nucleus of the vagus. This cord receives fibres from the glosso-pharyngeal vagus and spinal accessory, and is connected also with the hypoglossal. In the middle and lower part of the medulla the bundle divides into parallel branches, and these appear to stand in relation with the phrenic nerve. In the dorsal and upper part of the lumbar region the posterior vesicular column, which consists of ganglion cells and nerve fibres, and is most sharply and distinctly limited in the position of the lower dorsal and upper lumbar nerves, establishes a connexion between certain fibres of the posterior roots and other parts of the spinal cord of the same side. In continuous connexion with this nucleus are scattered masses of cells in the cervical and sacral regions of the spinal cord. In the spinal cord the respiratory bundle is a longitudinal cord of fibres, which may be traced upwards to the medulla oblongata. Nerve fibres pass upwards to the higher nerve centres that establish a connexion between this and the respiratory centre.^a Thus respiratory centres exist in the medulla and spinal cord, capable not only of propagating but of reflecting stimuli. The principal respiratory centre is situated near the calamus scriptorius.^b

Nerve fibres that serve for different respiratory purposes are connected with the medulla oblongata and spinal cord; motor nerves, that act on the muscles of inspiration and respiration; and sensory nerves, that transfer stimuli from distant parts to the respiratory centres, and ultimately to the muscles concerned in the respiratory acts. The vagi are distributed to the muscular structures found in the trachea (at the extre-

^a Krause. *Algemeine und microscopische Anatomie.* Pp. 391, 392, 412.

^b Longet. *Traité de Physiologie.*

mities of the rings and between the rings),^a bronchi, and lungs, and the same nerves contain different fibres that are destined for the mucous membrane of the air-passages.

The lung substance and certain respiratory muscles are supplied with ganglia, which confer upon them a certain degree of independent action. Kölliker^b found ganglia in the lung substance—a fact that has been confirmed by other observers; and in connexion with the distribution of the right phrenic nerve Luschka^c pointed out the existence of the phrenic ganglion. The experiments of Brown-Séquard with reference to the rhythmical contractions of the diaphragm and other muscles showed that these ganglia are not without their use.^d

The connexion that exists between the terminations of sensory nerves distributed to the air-passages and to various other parts of the body with the motor apparatus of the chest and abdomen causes the latter to respond to stimuli applied to the former, and section of nerves by which the centres are deprived of existing stimuli produces a change in the character of the respiration.

The effect of cold applied to the external surface in adults and children is an often-mentioned illustration of the effect of a stimulus applied to the peripheral extremities of sensory nerves, and irritation of the peripheral endings of the fifth and other nerves in the air-passages is sufficiently conclusive. The excitation of a sensory nerve was shown by Schiff to produce an increase in the number of respirations, provided such stimulus be moderate. If, however, the stimulus be strong, a diminution takes place, and inspiration tetanus may result.

Division of the vagi increases the depth and diminishes the number of the respirations (Fig. 1), whilst stimulation of the central cut extremity increases the number, and, if strong, will give rise to inspiration tetanus; the rhythmically active agents in expiration in this case become quiescent. The power of a reflex stimulus was found to affect the muscles of inspiration in the same order as increasing dyspnoea—viz., the diaphragm, the external intercostals, the intercartilaginous muscles, levatores costarum, scaleni, and serratus posterior (Traube).^e The agents that were rhythmically contractile before became quiescent during the stimulation.

Stimulation of the superior laryngeal nerve, if moderate, diminishes the number of the respirations; if strong, it produces expiration tetanus. Thus, in one of Rosenthal's experiments, with a moderate current (coils 200 mm. distant), the diaphragm was quiescent, the thorax remained in the

^a Ludwig. *Lehrbuch der Physiologie des Menschen.*

^b *Microscopische Anatomie.*

^c *Anatomie des Menschen.* I., 2, 218.

^d *Jrl. d. l. Physiologie.* Tome II., p. 115.

^e Rosenthal. *Die Athembewegungen u. ihre Beziehungen zum Nervus Vagus,* p. 182.

position of rest, no muscle contracted, and the thyroid cartilage moved quickly up and down. With a stronger stimulation (coils 160 mm. distant) there was quiescence of the diaphragm, tetanic contraction of the abdominal muscles, great diminution of the thoracic cavity, and depression of the ribs.^a The action of the superior laryngeal nerve is thus comparable to the action of the splanchnic on the intestines and the vagus on the heart, with this difference, that the centres on which these nerves act are situated in the organs themselves, whilst in the case of the former nerve the centre is situated in the medulla oblongata. (The researches of Legallois and Flourens showed that the centre for the diaphragm was situated in the medulla.) The fact that stimulation of the superior laryngeal nerve produces inhibition of the diaphragm by its action on the nervous centre in the medulla confirm the opinion of Ludwig and Weber that the two nerves above referred to produce inhibition by acting on nerve cells situated in the organs to which they are distributed.^b

The connexion of the respiratory centres with the higher parts of the nervous system ensures a certain amount of controlling power. By the will the number of respirations can be increased or diminished, and the respirations are influenced by the degree of activity of the cerebrum. The effect of close attention upon respiration is an often-mentioned illustration of this fact.

Certain changes in the blood produce very marked effects upon the respiratory actions. The blood so altered may cause these changes by its action upon the respiratory centres or upon the peripheral terminations of nerves connected directly or indirectly with them.

The effect of the introduction of certain substances into the blood is well known. Atropia, for example, when given in small doses, increases the number of the respirations—in large doses it diminishes. Opium retards, and its action is distinct after section of the vagi.^c Strychnia increases the number and depth, and phenic acid causes the respirations to become, first, rapid and regular, and then rapid and feeble.^d

The effect of morbid poisons has only to be mentioned.

An increase or diminution of oxygen in the blood gives rise to phenomena which are due to an increased or diminished stimulus to the nerve centres, which may take place as the direct effect of an increased or diminished stimulus, or indirectly by the increased or diminished oxidation of certain products in the blood.^e An increased amount of carbonic acid acts as a powerful stimulus to the respiratory centre.

^a Rosenthal. *Op. cit.*, 229.

^b Comptes rendus. 1861. 755.

^c Kölle. *Handbuch der physiologischen Therapeutik und Materia Medica.* Pp. 1004 and 1072.

^d Bert. *Leçons sur la Physiologie comparée de la respiration.* 416.

^e Ludwig and Schmidt. *Berichte d. Gesell. der Wissenschaften zu Leipzig.* 1867.

Dyspnoea can be produced in an animal to breathe nitrogen or carbonic acid (70 O to 30CO₂). In the former the quantity of oxygen in the blood is greatly diminished, the quantity of carbonic acid being little affected; in the latter the carbonic acid is greatly increased, whilst the oxygen Pflüger found in some experiments increased.^a

Dyspnoea can be produced by opening the thoracic cavity and puncturing the lung over the surface; if oxygen or air be forced into the lung through the trachea the dyspnoea disappears, and will reappear if carbonic acid or nitrogen be substituted for the former gases (Traube). It can also be induced by fitting a stop-cork to a trachea canula and diminishing the aperture.^b

~~THE BRITISH SOCIETY FOR MEDICAL OBSERVATION~~ Following method, adopted by Dr. von Kries and myself in our experiments in Professor Ludwig's laboratory, has this advantage, that the resistances in different experiments can be easily ascertained and compared. A trachea canula was fitted to Müller's bottles;^c the dyspnoea was produced by lowering the tube in the mercury of the inspiration bottle. Some of the results are shown in the following table:—

TABLE I.

Time	Number of respirations in five seconds	Temperature	Resistance in millimetres	Duration of resistance
H. M. S. 4 17 0	.45	38.2	0	—
4 22 0	.5	38.6	0	—
4 24 0	1.1	38.6	5	35
4 24 35	.7	38.6	0	—
4 24 0	1.0	38.6	5	35
4 26 30	1.	38.6	0	—
4 27 0	.5	38.6	0	—
4 29 30	.8	38.6	2	103
4 31 0	1.5	38.6	0	—
4 32 0	4.4	38.6	0	—
4 33 0	1.	38.4	2	150
4 36 0	1.	38.4	0	—
4 37 0	.55	38.4	0	—
4 43 0	.833	38.4	2	150

Pflüger. Archiv. Band I., p. 92, et seq.

Cyon. Methodik der physiologischen Experimente und Vivisection. P. 253.
Annalen der Chemie und Pharmacie. B. 108, p. 257.

In another experiment, with a resistance of 0 mm. of mercury, the number of respirations was 6 per minute; with a resistance of 5 mm. the number was increased to 18·2 per minute; and with a resistance of 2 mm. the number of respirations was 10 per minute. The vagi were cut at the beginning of the experiments. Bert has made numerous experiments with reference to the effects of obstruction. They will be found in his book on Respiration.*

Dyspnoea and asphyxia can be produced by supplying an animal with air or oxygen which contains ozone. The effects of a change in the condition of the oxygen inhaled have been studied by Professor Redfern, Dr. Barlow of Glasgow, Dr. Richardson, and others. Dr. Redfern made use of mice in many of his experiments. The ozone was prepared by electrolysis, and, after being purified, was passed into the chamber containing the animal. A mouse (in Experiment XI.), weighing 60 grains, was placed in the chamber containing oxygen and ozone, at 4 33 p.m.; in half a minute the eyes were closed; in a minute the head was elevated during inspiration. At 4 35 the mouse was removed, and exposed to a current of air, but no improvement took place. At 5 15 the animal is still breathing almost imperceptibly; eyes closed; can walk a few paces when disturbed. At 10 10 the animal, which has remained quiet since last report, and whose respirations have been regular (87 per minute) during the greater part of the time, is attacked now with dyspnoea. The animal died at 10 30 p.m. The right side of the heart was found gorged with blood; the left side was empty.

In order to determine whether the dyspnoea was due to closure of the glottis, an opening was made in the trachea. The animal (in Experiment XIV.) was then introduced into the chamber; in 2½ minutes the mouse fell over on its side, and in 3½ minutes died.

In Experiment VIII. the mouse commenced to inhale the ozone at 12 27; at 12 52 the mouse moved about uneasily, and rubbed its nose; at 12 58 convulsions and death. It will thus be seen that death resulted from asphyxia, the heart in this case also being gorged with venous blood. The experiments of the same observer on rabbits, frogs, insects, and worms, were attended with similar results. These experiments have been confirmed by the observations of Dr. Barlow,^b who considers the asphyxia to be due to an alteration of the lining of the air-cells by the ozone.

In the experiments recorded above, the amount of ozone present was about the $\frac{1}{40}$ th part, the remainder being oxygen; so that oxygen, in the form of ozone, is a very powerful agent in the production of dyspnoea.

Dyspnoea produced by heat is of interest to the physician and physiologist.

* Op. cit., p. 408.

^b Journal of Anatomy and Physiology. Vol. XIV., Part I.

If an animal is introduced into a hot-air bath, and the temperature so regulated as to produce an increase in the temperature of the animal (the temperature is determined by means of a thermometer placed in the vagina or rectum), when such an increase is sufficiently great, the respirations increase in number, and diminish in depth.

The respirations can be registered in various ways. The apparatus of Marey^a and Bert^b are described in their works; many other methods are given by Cyon.^c A very convenient method is the following:—A small bag connected with a glass tube is introduced into the oesophagus, and passed down to the thorax to within a short distance of the oesophageal opening of the stomach; the other end of the tube is connected with a Marey's tambour; the bag is dilated with water, introduced by means of a syringe after the bag has been passed down to the thorax. An alteration in the capacity of the thorax causes a movement of the lever of the tambour, so that the respirations can be easily registered. Table II. gives the results of an increased temperature upon the respirations of a dog (Figs. 3 and 4).

TABLE II.

(The temperature and the number of respirations in five seconds are given.)

Temperature	Respirations in five seconds	Temperature	Respirations in five seconds	Temperature	Respirations in five seconds
° 39·8	3·5	° 40·5	3·0	° 41·1	11·9
39·9	3·7	40·6	3·7	41·2	6·4
40·0	3·7	40·7	4·9	41·3	5·4
40·1	3·5	40·8	4·8	41·4	7·9
40·2	3·3	40·9	4·5	41·5	8·2
40·3	2·6	41·0	7·4	41·6	7·3

The table confirms the results of Ackermann and Goldstein.^d A reference to the table and plate will show that two very important changes take place in the respirations—viz., an increase in frequency and a diminution in depth; and whilst the former is generally characteristic of dyspnoea, the latter is present in a different condition, to which I shall hereafter refer.

^a La Méthode Graphique dans les Sciences Expérimentales, p. 541.

^b Bert. Op. cit., p. 209.

^c Op. cit., p. 208, et seq.

^d Ueber Wärmedyspnoe. Inaugural Abhandlung. 1871.

The dyspnoea so produced is referable to one of the following causes—direct stimulation of the respirations without a corresponding stimulation of the inhibitory centres, or a weakening of the latter without affecting the former. In the former case, the centre itself, the peripheral extremities of afferent nerves, or the cerebrum, are the parts to which the stimulus is applied; in the latter, the respiratory inhibitory agents are the parts affected. If the increase of temperature acts only on the inhibitory centres, then the excitor nerves would either produce apnoea by their own action, or assist artificial respiration in producing it in case complete oxygenation be sufficient for that purpose. Ackermann and Goldstein have shown, however, that apnoea cannot be produced by artificial respiration when an animal suffers from heat dyspnoea, and this although the blood contained in the veins became bright red during the experiment—hence the stimulus must be due, in part at least, to the direct or indirect stimulation of the excitor centres. That heat dyspnoea is not due to the presence of venous blood alone, the experiments of Ackermann and Goldstein show; that it is almost entirely due to the increased temperature, our experiments seem to prove, as artificial respiration altered but little the character of the respirations.

The stimulus may be applied to the respiratory centre directly or indirectly, as already mentioned. Goldstein's experiments show that the dyspnoea is not produced by the action of the heat upon the peripheral extremities of the sensory nerves, on the peripheral extremities of the vagus, or the higher sense organs. Cold applications to the surface, cutting the vagi, and the administration of narcotics, did not affect the results. Heating the carotid in a water bath was found sufficient to produce heat dyspnoea.

The amount of air breathed during this form of dyspnoea seems to be greatly augmented. Several methods may be used in an investigation of this kind. Müller's bottles may be employed with water or mercury, or Czermak's lever^a applied to the chest, and connected with an electromagnetic arrangement which alternately opens and shuts the inspiratory and expiratory tubes. For the determination of the gases, Regnault and Reiset's modification of Lavoisier's apparatus is the most accurate.^b

The respiratory movements of an animal cease under certain circumstances, and this though the heart beats as before, and the actions of the body remain unaltered. This condition was named apnoea by Rosenthal. Hook, in 1667, opened the chest of a dog before the Royal Society, and by means of a bellows forced air into the lung, which escaped by punctures made over their surface. He found that "the eyes were all the

^a *Gesammelte Schriften*, p. 820.

^b *Recherches Chimiques sur la Respiration des Animaux. Annales de Chimie*, 3rd Series, 299. T. XXVI. For a description and figure of Lavoisier's apparatus see Jamin, *Cours de Physique*. T. II., p. 494.

time very bright," and the heart beating regularly; there was no respiratory movement^a (Sanderson).

Apnoea can be induced by forcing air into the lung by a series of blasts (60 or more in the minute). The air escapes from the chest after each insufflation, by an aperture in the canula.

The duration of the apnoea is influenced by the duration of the artificial respiration that has preceded it.

I have frequently obtained apnoea for 15 seconds in dogs by employing artificial respiration for one minute, and apnoea for 25–30 seconds by artificial respiration of two minutes' duration. By prolonged artificial respiration, however, apnoea may be obtained for two minutes (Cyon,^b Pflüger^c), or even for five minutes (Rosenthal). Ewald, by artificial respiration for half an hour in a dog, obtained apnoea for half a minute to a minute and a half. This was followed by one or two superficial inspiratory actions, which were succeeded by a pause; after ten minutes normal respiration was established.

In considering the causes of apnoea, it is necessary to take account of the condition of the blood during the cessation of respiration, and the nature and action of the force employed. Ewald found that the oxygen in the blood was slightly increased, and the carbonic acid distinctly diminished.^d In one of his experiments (*Versuch 4, Serie II.*) the arterial blood was a brighter red during apnoea than before it. Pflüger found that the amount of oxygen taken up during artificial respiration was sometimes greater and sometimes less than normal—the amount of carbonic acid given out greater. Finkler and Oertmann showed that the amount of oxygen in the blood depends on the force used—anything that diminished rapidly the circulation diminishes the oxygen—and that whilst at the beginning the amount of oxygen taken up is apparently less, and the amount of carbonic acid given out is greater, the reverse held after the cessation of the artificial respiration. They further showed that the colour of the venous blood depends on the character of the artificial respiration and the energy of the heart's action.^e The respiratory centres thus lose any stimulus due to the diminution of oxygen or the increase of carbonic acid; quiescence in the active respiratory agents is the result.

It is necessary to take a glance at the effects produced in an animal by breathing pure oxygen. Several observers have directed their attention to this subject. Professor Redfern prepared pure oxygen from peroxide of manganese. The gas was purified by means of lime-water

^a *Handbook for the Physiological Laboratory.* P. 318.

^b *Op. cit.*, p. 256.

^c *Archiv.* B. I., p. 256.

^d *Inaugural Dissertation*, 1873; and Pflüger's *Archiv.* 1873. P. 575.

^e Pflüger's *Archiv.* 1877.

and caustic potash, and passed into a large receiver, placed over lime-water; into this receiver a jet of lime-water kept constantly playing. Two mice were introduced into the atmosphere of oxygen (Experiment XIX.), and were confined in a wire cage, and supplied with food. The receiver was perfectly free from carbonic acid during the whole experiment, and the amount of the latter gas was estimated from time to time, and noted. During the whole time the mice remained remarkably tranquil, and no remarkable difference was observed in the character of the respirations.

The amount of oxygen absorbed when air is breathed is placed by Pflüger at nine-tenths of the amount absorbed when oxygen is breathed. Gréhant^a found, however, the amount very much greater in the latter case, and considers the increase, $\frac{1}{8}$ th, due to the rapidity of the circulation and activity of the respiratory movements, which cause a frequent renewal. It must be remembered, however, that frequent renewals of the air in artificial respiration is attended with a diminution of the carbonic acid contained in the blood and in the air-cells; and thus the stimulus is diminished. It is well known that if, by the power of the will, the number of normal inspirations be increased, the amount of carbonic acid expired is increased. Czermak points to this fact in connexion with Rosenthal's experiments. He says:—"If in tranquil respiration I make 3-4 respirations in 15 seconds, and interrupt the breathing by a final deep inspiration, I succeed in keeping my breath for 30-35 seconds, then, however, the respiratory necessity forces me to continue respiration. If, on the other hand, I make 15-18 complete respirations in 15 seconds, and again interrupt my breathing with a similar deep inspiration, I am enabled to retain my breath for another half minute or minute before I am forced by the same degree of respiratory need to resume my respiration."^b

The amount of oxygen absorbed by the blood varies, according to the experiments of M. Gréhant, in different apparently healthy animals of the same species (thus the volume per cent. that could be absorbed he found in one case 18·8, and in another 31·3), and is proportional to the amount of haemoglobin in the blood.

The experiments of von Lesser, performed in the Leipzig laboratory, show that many circumstances affect the amount of haemoglobin in the blood. The amount of haemoglobin in the large arteries and large veins, at the same time and under the same circumstances, is the same. A variation in the rapidity of the flow of blood in the arteries, due to increase in the peripheral resistance or variation in the number of heart beats, produces no change. The amount of haemoglobin in the blood-current is dependent on such variations in tension in the arterial system

^a Gréhant. *Comptes Rendus.* T. LXXV., p. 496.

^b Centralblatt f. d. Wissenschaft, 1866; and *Gesammelte Schriften*, p. 767.

as serve to diminish or increase quantitatively the flow of blood to the right heart. This observer has shown that the abstraction of blood, provided that it does not exceed a certain amount, does not diminish the amount of haemoglobin. Tying an animal in the recumbent position, produces a transitional increase and decrease. The cutting and stimulation of the spinal cord affects the amount of haemoglobin in so far as it affects the flow of blood to the right heart. Tying the portal vein is attended with a diminution in the amount of haemoglobin in the arterial system; this diminution takes place with a variable degree of rapidity depending on the vascular connexions of the vena portæ. The diminution is apparently more rapid than the sinking of the arterial pressure. Interruption of the circulation in the lower extremity is attended with somewhat variable results.^a

These experiments prove that the number of corpuscles in the arterial and venous system is subject to variation, and that it is dependent upon such a variation in the tension of the vascular system as increases or diminishes the flow of blood to the right heart; and this tension is, within certain limits, under the control of the nervous system.

In making an estimation, therefore, of the amount of oxygen contained in the blood under different circumstances, it is necessary to take account of the amount of haemoglobin contained in the blood-stream. Thus, if the number of blood-corpuscles in any part of the system be increased, more oxygen, *ceteris paribus*, will be found in that part of the system, and if less blood-corpuscles, then less oxygen will be present. An alteration in the relation of the blood-corpuscles to the capillary walls is regarded by some as a result of deficient oxygenation. In this respect their condition is, to some extent, comparable to the relative conditions of the blood and blood-vessels in inflammation. In the latter, in the second stage, a massing of the red blood-discs takes place in the capillaries. This phenomenon, which was regarded by Lister to be of the same nature as the formation of *rouleaux* in blood that is drawn, has been shown by other observers to depend, in part or altogether, on an alteration in the capillary walls.^b

A change in the distribution of the blood-corpuscles in the state of asphyxia, which would be attended with the withdrawal of an appreciable number of blood-discs from the larger arteries and veins, would necessarily, other things being the same, lead to a diminution in the amount of oxygen in the larger veins and arteries. An estimation of the amount of oxygen in the larger arteries and veins would, in that case, require correction before it could be taken as a sign of the oxygenation of the general mass of blood. In the condition of apnœa, on the contrary, the diminution in

^a Ueber die Vertheilung der rothen Blutscheiben im Blutstrom. Reichert und Du Bois Reymond's Archiv. Phys. Abth. 1878.

^b Dr. Sanderson, in Holmes' Surgery. Vol. V., p. 757.

the amount of the carbonic acid in the blood produces necessarily an alteration in the relation of the blood to the capillaries. If such an alteration be attended with a withdrawal of the blood-discs from the capillaries and an increase of these elements in the larger arteries, then the amount of oxygen, as given by an analysis of the blood in the larger vessels, is too high, if it be taken as a sign of the oxygenation of the general mass of the blood. Pflüger has shown that the colour of the blood depends on the number of corpuscles present, as well as the gas contents.^a The venous blood in apnoea is frequently dark in colour—a circumstance attributed by Finkler and Oertmann^b to the character of the artificial respiration and the nature of the heart's action. They showed that if the animal be placed in a warm bath the venous blood becomes red. This may be accounted for in two ways. The effect of the warm bath is to cause dilatation of the capillaries, and the blood that passes into the veins has more oxygen, and the heart's action is at the same time increased by the heat (Finkler and Oertmann); or the change in the colour of the blood, from dark red to bright red, may be accounted for by supposing the heat to produce such alteration in the walls of the capillaries as leads to a dilatation of these vessels and an accumulation of red blood-corpuscles in them. In this case the number of blood-discs in the larger vessels would be reduced, and a brightening in the colour would result—so that if such an alteration in the general distribution of the red blood-corpuscles takes place in asphyxia and apnoea, the number of oxygen carriers in the larger vessels in the former case is diminished, and in the latter increased, whilst the total number in the blood may be unaltered.

The velocity of various fluids through capillary tubes must be regarded as an important element in the determination of the general condition of the blood, from an analysis of a portion of blood taken from a large vein or artery during the condition of apnoea or asphyxia.^c

It is necessary to take a glance at the mechanical means used to produce apnoea. Artificial respiration differs from ordinary respiration in this way, that in the former the air is used to force out the lungs and chest walls, and in the latter the expansion of the chest and lungs draws in the air. The force used in drawing air into the lungs, and which acts upon the various tissues in the air passages and chest walls, produces the simple mechanical effects of pressure upon the terminations of nerves in their structures, or by expanding the muscular and elastic tissues of which the lungs and parietes are composed, alters the condition of the nerves supplied to these structures. The state of expansion of the chest walls and lungs acts as a stimulus to the expiratory (inhibitory) nerves of respiration, and the state of contraction acts as a stimulus to the inspiratory

^a Archiv. B. I.

^b Op. cit.

^c Annales de Chimie. III., XXI., 76.

nerves^a (Hering and Langendorff). The effect of artificial respiration is to stimulate the nerves distributed to chest walls, diaphragm, and air-passages, so as to produce an inhibitory action, and in this way the active inspiratory agents become quiescent. The experiments of Brown-Séquard made with a view to determine the cause of the arrest of strychnia tetanus under certain circumstances, support this theory. Brown-Séquard confirmed the observations of Rosenthal and Leube, that insufflation arrests strychnia tetanus, but differs from these observers with regard to the cause. Rosenthal considered the arrest to be due to the increase of the oxygen in the blood. Brown-Séquard found that the mechanical effect of insufflation upon the terminations of the vagi and the nerves of the diaphragm was the cause of the cessation of the tetanic spasms, since insufflation was without effect after division of the vagi and section of the spinal cord above and below the origin of the phrenic nerves.^b Therefore it is seen that insufflation has a distinct inhibitory effect upon muscular contraction, and this by the stimulation of the terminations of the nerves supplied to the air-passages and diaphragm.

The respiratory centres then can be excited in many ways. Oxygen diminishes, carbonic acid excites, respiratory action. As the oxygen carried to the respiratory centres by the blood-discs, the fewer the number of blood-corpuscles that travel to the medulla, and the less oxygen they contain, the respiratory centre receives the greater stimulus. Increase in the amount of oxygen in the blood-corpuscles and increase in their velocity will compensate for a diminished number. An increased velocity can be obtained by an increased action of the heart, and an increase of oxygen by more perfect aeration.

Artificial respiration acts in two ways upon the nerve-centres. The carbonic acid contained in the blood and air-passages is diminished, so that the nerve-centres lose the stimulus due to the action of carbonic acid on the respiratory centres; secondly, the pressure of the air forced into the lungs upon the nerve terminations in the bronchi, &c., produces an inhibitory effect upon certain respiratory structures.

EXPLANATION OF PLATE.

Fig.

- 1. Respiration curve after cutting of the vagus.
- 2. a. Artificial respiration. } Tracing continuous with, and subsequent to, Fig. 1.
b. Apnoea.
- 3. Respiration curve, vagus cut, with pulse waves.
- 4. Same tracing (heat dyspnoea).
- 5. Respiration curve before resistance.
- 6. a. During resistance.
b. After resistance.
- 7. a. } Respiration curves.
b.

N.B.—In Figs. 1 to 6 the vertical lines mark intervals of 5 seconds. In 7 and 8 the tracing of a time-marker indicating seconds is shown.

^a Du Bois Reymond's Archiv. 1879.

^b Ringer. Therapeutics. P. 561.

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MEDICAL
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^b Ringer. Therapeutics. P. 561.

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SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
August 14, 1880.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOtic DISEASES							Annual Rate of Mortality per 1,000 Inhabitants	
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		
Dublin,	-	314,666	800	778	26	21	41	1	26	23	41	32·2
Belfast,	-	182,082	541	362	2	6	1	1	12	7	39	25·9
Cork,	-	91,965	189	178	—	—	8	—	5	10	7	25·2
Limerick,	-	44,209	107	75	—	—	3	—	—	2	2	22·1
Derry,	-	30,884	51	54	—	—	—	—	5	—	—	22·7
Waterford,	-	30,626	54	58	—	—	5	—	—	2	5	24·6
Galway,	-	19,692	39	36	—	—	—	—	—	1	1	23·8
Sligo,	-	17,285	21	18	—	—	—	—	—	—	1	13·5

Remarks.

The mortality was again very high in Dublin. It was rather high in Belfast, Cork, Waterford, and Galway ; moderate in Derry and Limerick ; and very low in Sligo. The registered deaths represented a death-rate of 22·9 per 1,000 of the population annually in twenty large English towns, including London (in which the rate was 23·5), and of 26·8 per 1,000 in the sixteen principal town districts of Ireland. In Glasgow the death-rate was 20·6, in Edinburgh 18·2, in Dublin 32·2. When the deaths of persons admitted into public institutions from localities outside the district are deducted, the rate of mortality in the Dublin registration district appears as 29·1, while that within the municipal boundary remains as high as 35·0 per 1,000. The deaths from zymotic diseases were 211, nearly double the average number—namely, 113·4. Scarlatina and diarrhoea were the most fatal maladies of this class. Of the 41 victims to diarrhoea, 35 were children under five years of age. Whooping-cough and smallpox were also prevalent and fatal. Of the 23 deaths attributed to fever, 11 were ascribed to typhus, 7 to enteric, and 5 to so-called "simple continued" fever. Whooping-cough and scarlatina were

epidemic in several of the Irish towns. In London 1,267 deaths were caused by summer diarrhoea, compared with 354 in the previous four weeks. In Dublin diseases of the organs of respiration were credited with 108 deaths, compared with an average of 61·4 in the corresponding period of the preceding ten years. Bronchitis caused 71 deaths (average = 40·4), and pneumonia caused 20 deaths (average = 11·9). At the close of the period the number of cases of epidemic diseases under treatment in the principal Dublin hospitals was as follows:—Smallpox 69, measles 4, scarlet fever 47, typhus 33, typhoid 20, and pneumonia 12.

METEOROLOGY.

*Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W.
for the Month of July, 1880.*

Mean Height of Barometer,	-	-	-	29·870 inches.
Maximal Height of Barometer (on 4th at 9 p.m.),	-	30·214	"	
Minimal Height of Barometer (on 28th at 9 a.m.),	-	29·436	"	
Mean Dry-bulb Temperature,	-	-	-	58·4°
Mean Wet-bulb Temperature,	-	-	-	55·8°
Mean Dew-point Temperature,	-	-	-	53·4°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	410	inch.	
Mean Humidity,	-	-	-	84·1 per cent.
Highest Temperature in Shade (on 27th and 28th),	-	68·7°		
Lowest Temperature in Shade (on 31st),	-	-	-	47·2°
Lowest Temperature on Grass (Radiation) (on 22nd),	-	43·4°		
Mean Amount of Cloud,	-	-	-	68·8 per cent.
Rainfall (on 24 days),	-	-	-	6·087 inches.
General Directions of Wind,	-	-	-	W. & W.N.W.

Remarks.

A month remarkable for the number of "thunderstorm depressions" which passed over the British Islands, and for the frequency and severity of the showers which accompanied them. In Dublin the large amount of cloud, frequent showers, and rapid evaporation in the intervals of fair weather prevented any summer heat by day, so that not once did the shade thermometer rise to 70°. Fortunately, the nights were as a rule comparatively warm, and consequently the mean temperature fell short of the average (60·1°) by only 2·2°, compared with a deficit of 3·8° in July, 1879. The rainfall was almost three times the average (2·250 inches), and the "rainy days" were 24, compared with an average of 16·0 in the previous fifteen years. In the week commencing on Sunday, the 11th, severe thunderstorms raged almost daily. At 1 p.m. of the 12th rain fell in torrents in Dublin, and the downpour was renewed next morning, the resulting rainfall being 895 inch. Early on the 14th a destructive storm of thunder and hail passed over the county Wicklow

from E. to W., and after 9 p.m. heavy rain with lightning and distant thunder prevailed in Dublin. In the South of Ireland and over the midland counties the storm was of exceptional violence, and several persons were killed by lightning. At 4 a.m. of the 15th another thunder-storm passed over Dublin, and on the night of the 17th 1·310 inches of rain fell subsequently to the prevalence of thunder and lightning for more than two hours. Fortunately, on the evening of the 18th the rain-clouds broke up, and a period of quiet, dry weather set in, lasting in Ireland until the 23rd. Early on the morning of the 26th another very heavy fall of rain occurred in Dublin, amounting to nearly seven-tenths of an inch; and afterwards the weather remained changeable with alternate sunshine and showers to the end of the month. In Dublin thunderstorms occurred on the 3rd, 15th, and 17th; thunder was heard on the 2nd, 9th, and 14th; lightning was seen on the 14th. Partial solar halos were observed on the 9th, 16th, and 29th. The atmosphere was foggy on the morning of the 22nd. No hail was noticed in the city, but it fell on several occasions in various parts of the country.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

OXALATE OF CERIUM FOR THE RELIEF OF COUGH.

THE *New York Medical Record* of June 12th contains an exhaustive article by Dr. Cheesman on the use of cerium oxalate for the relief of cough. Mr. Thomas Clark appears to have been the first person to have recommended the oxalate in cases of chronic cough and shortness of breathing (*Practitioner*, April, 1878). In the St. Luke's Hospital the drug was at first employed with such marked success in a few bad cases that subsequently the use of all other sedatives, opiates included, and cough medicines was abandoned, and, with rare exceptions, the oxalate of cerium alone was used as a cough medicine among a daily average of about twenty-five phthisis patients, representing all phases and stages of the disease. There were stubborn cases in which other remedies were at times substituted, but in most of them the oxalate was finally adhered to as the most satisfactory. The general treatment was kept up as usual in all cases. The oxalate was generally given in dry powder simple upon the tongue, and was most successful when so administered. It was preferred to give it on an empty stomach, and from one to three large doses daily rather than an equal quantity in small and frequent doses. The initial dose was usually five grains at bed-time, or in the morning on waking, or both; the doses being increased from this, unless relief was

obtained, to ten grains or more, three times a day. Occasionally large doses allayed cough at once when smaller ones had produced no effect. Sometimes the cough, after being for a time relieved by small doses, returned, and was again relieved by increasing the doses. The drug lost its effects altogether, after a time, in a few cases; in many its effects did not wear out, at least during the time it was found necessary to employ it. Its benefits were prolonged by reducing or stopping the doses as soon as relief came, and increasing or resuming them on return of the cough. In several cases, after one or more failures, a subsequent trial with the same patient was successful. Oxalate of cerium does not disturb the stomach as do opiates and most other cough remedies; but on the contrary it tends to relieve nausea and to improve digestion. The different preparations on the market are not of equal value, and when success is not obtained with one another should be substituted.

THE HYSTERICAL ELEMENT IN ORTHOPÆDIC SURGERY.

DR. SHAFFER's article on the above subject (*Archives of Medicine*, April, 1880) is a valuable contribution to a subject about which the general practitioner is very slightly conversant. The first case reported is that of a girl, aged fourteen, who had always enjoyed good health. About five years previous to her visit to Dr. Shaffer she fell from a wagon, the lower part of her spine being hurt by the fall, a black and blue spot developing near the last lumbar vertebra; in a few days she recovered. When about twelve years of age she commenced exercising on horseback, and after a time complained of pain in the back, but soon recovered under treatment. About three months later she was thrown over her horse's head, when the spine was again injured. This time she became very nervous and irritable, complained of a tired feeling in the back on the least exertion, and also of tenderness over the spine. As a distant relative had had Pott's disease, the mother associated this disease with the affection existing in her daughter. The diagnosis of caries of the last lumbar vertebra was made by her physician, and she was treated accordingly, with an increase in the symptoms. Shaffer, on examining, found that there were several tender spots in the vicinity of the twelfth dorsal and first lumbar vertebra, but that there was more pain produced by slight irritation of the clothes than when deep pressure was made. There was some deformity, which disappeared when the patient was lying down; the spine was normally flexible, and the psoas and iliac muscles offered no resistance when put on the stretch, with pelvis firmly held, and the patient in a recumbent attitude. The diagnosis arrived at was neuromimesis, chiefly because of the superficial character of the pain, and the normal movements of the spine. In another patient there had been concussion of the spine, but previous to this she had complained of pains in the back. The spine presented an apparent curvature,

both laterally and antero-posteriorly. On examination it was found that the deformity disappeared when in a recumbent position. Several points of tenderness existed over the spinous process; the psoas muscles were not contracted, and there was no muscular rigidity. In this the diagnosis had been Pott's disease, but Shaffer believes it also to have been neuro-mimesis for the following reasons: absence of rigidity of the muscles; also of the characteristic attitude and gait seen in Pott's disease, and nocturnal cry, both of which were wanting in this case; also in the true form of the disease the pain would be referred to the region where the spinal nerves from the diseased part runs. Other instances of these affections are recorded, and the following conclusions are arrived at by the writer, and given here in a condensed form:—There is atrophy due to the lesion in chronic osteitis, and muscular spasm, which disappears when the patient is under the influence of an anaesthetic, but which is not affected by the administration of opium or chloral. There is also reduction of the faradic contractility. In emotional contractions the muscular rigidity, which is variable, disappears under the influences of anaesthetics, and when asleep, and there is normal reaction to the faradic current. The atrophy is only functional.—*N. Y. Med. Record.*

NEURALGIA OF THE TESTIS.

IN a paper on this not very common affection, read before the N. Y. Neurological Society (*St. Louis Courier of Medicine*, May, 1880), Dr. W. A. Hammond details two cases successfully treated by forcible compression of the spermatic cord. The relief afforded in each case was prompt and decided. Pressure was applied by means of an apparatus similar to a lemon-squeezer. To be effectual in relieving the pain of a neuralgic testis the pressure, Dr. Hammond says, must be strong enough to break up the axis cylinders of the nerves.

CONVULSIONS IN CHILDREN.

AT a recent meeting of the New York Academy of Medicine, Dr. A. A. Smith read a practical paper (*N. Y. Med. Rec.*, May 8) on the above subject. Whatever the cause, whether due to organic disease or to functional disturbance, the convulsion should, according to Dr. Smith, be arrested and another prevented by the administration of anaesthetics, preferably chloroform. As soon as the cause was found, it should be removed if possible. If the convulsions were due to pain produced by other than causes such as the pricking of a pin, tight abdominal bandage, which could be easily removed, and an overloaded stomach, which could be easily emptied, opium was the most valuable remedy that could be used, and he would employ it if the child was more than four months old. The convulsions dependent on the pain of teething should be controlled first by opium, and secondly by the gum lance. The effort to lance the gums

before the pain was subdued by opium or a similar agent, probably would cause another convulsion. Convulsions dependent on the pain produced by worms or other foreign bodies in the intestinal canal, or errors in feeding, first should be controlled by opium, and then a cathartic should be given. Convulsions produced by worms were not always attended by pain. The cathartic and opiate might be combined with advantage. If there was reason to believe that the source of irritation was in the rectum or near it, and an enema was indicated, an opiate should be given first, and when its influence was secured sufficiently to control the convulsion, then the injection might be given. With reference to lancing the gums, Dr. Smith believed that if they were swollen and hot they should be lanced. Further, if it was time for the tooth to appear he believed the gum should be scarified; for the irritation was due, not infrequently, to deep-seated pressure such as could not manifest itself upon the surface. Whatever theory might teach, it seemed to him that from clinical observation it was conclusive that lancing the gums was followed frequently with marked relief. Dr. Smith rejected the hot bath in the treatment of convulsions of children; for almost invariably the child had one or more convulsions while in the bath—the very agitation incident to the giving of it adding to the excitement of an already disturbed nervous system. The object in treatment was to keep the nervous system as free as possible from agitation; hence he forbade the hot bath, insisted that the child should not be restrained while in a convulsion, that it should be placed on a bed that did not squeak, that the room should be kept perfectly quiet, have plenty of fresh air, be partially darkened, contain only one person at a time, and that opening and shutting of doors should be avoided. Over-active treatment was uncalled for, if not positively dangerous. Dr. Smith also spoke of the sedative effect of the bromides, and of the value of maintaining it in cases in which the prolonged use of opium was undesirable. In occasional cases the bromides aggravated the symptoms. Under such circumstances chloral might be used. To control convulsions dependent on high temperature he recommended veratrum viride. Its tendency to produce vomiting might be controlled by combining it with opium. Two drops of the tincture might be given every hour to a child from six to eighteen months old. In the discussion on the paper, Dr. J. Lewis Smith said that he had not carried a gum-lance for five or six years. He had relied upon the bromides, of potassium preferably, in large doses frequently repeated—two to six grains for a child over two months and under one year of age, repeated every ten, fifteen, or twenty minutes, according to the severity of the case—to control the irritation produced by the eruption of the teeth. In convulsions of children he gave hydrate of chloral, and always by rectal injection, and had been astonished to see how quickly the convulsive movements would cease in a child that had been so treated. He could

not agree with the author of the paper in condemning the use of the hot bath, as he had often seen exceedingly good results follow its administration.

THE THERAPEUTIC VALUE OF THE IODIDE OF ETHYL.

DR. R. M. LAWRENCE, of Boston, has recently carefully studied the effects of iodide of ethyl, especially when inhaled, as a remedy for the relief of certain forms of dyspnœa. He states (*N. Y. Med. Record*, June 19) that ethyl iodide has no depressing effect on any of the functions. It is a mild invigorant, and its primary action resembles that of sulphuric ether, while it differs from the latter in that it has no anaesthetic properties. A very brief time is required for its absorption. It has been detected in the urine in ten minutes after its inhalation. It appears that ethyl iodide exerts a special influence over the respiratory function. The drug may be administered as follows:—Having moistened a handkerchief with eight or ten drops, the patient may be directed to inhale the vapour therefrom. As soon as he shall have acquired confidence, let the inhalations be made directly from a small vial, containing half a drachm of the drug, and applied to the nostrils. Let the inhalations be continued for ten minutes at a time, thrice daily, or oftener. Should slight nervous symptoms, due to the primary exhilarating effects of the ether, supervene, the inhalations may be discontinued for some seconds, and then resumed. By this method the system is kept constantly impregnated with iodine. In general, ethyl iodide appears, in some way, to favour the oxygenation of the blood, and thus stimulate, in a reflex manner, the respiratory muscles. Thus the increased buoyancy of the act of breathing, experienced in widely different pathological conditions, as a primary result of the inhalation of this drug, may be intelligently explained. If this agent has, as Dr. Lawrence believes, a very positive therapeutic value, and is a prompt, safe, and efficient remedy in many forms of dyspnœa, it deserves the attention of the profession.

THE TREATMENT OF BURNS.

A NUMBER of cases of more or less severe burns have been treated in St. Frances' Hospital, N. Y., very successfully, by an application of a gum dressing, which consists of a paste composed of gum acacia, $\frac{3}{4}$ ij.; gum tragacanth, $\frac{3}{4}$ i.; carbolised water (1-60), 1 pint; and molasses, $\frac{3}{4}$ ij. It is applied to the burned surface with a broad flat camel's-hair brush immediately on admission to the hospital, and dries in the course of an hour or two. The dressing is then renewed at suitable intervals, until a firm and unyielding scab is formed. Generally four applications are sufficient for this purpose. The molasses appears to prevent the contraction of the covering, while the carbolised water destroys any odour. The application is not attended with any pain to the patient, and

effectually excludes all air to the burned surface, thus avoiding subsequent smarting. The scab cracks and peels off in the course of a fortnight, leaving either a mere rubefaction or a healthy granulating surface. If pus accumulates in the meantime under the scab, the latter is either punctured or gently lifted, giving exit to the discharge. No other dressing is required. Although forming a rather unsightly scab, the dressing is really a cleanly one. This plan of treatment is substantially the same as that advocated by the late Dr. Gurdon Buck, and, all other things being equal, is considered to give the best results. Its special advantages are its ease of application, the small amount of subsequent dressing required, and the freedom from pain. The granulating surfaces are treated with either simple cerate or the white oxide of zinc ointment, according to indications.—*N. Y. Med. Record.*

CASTOR-OIL.

CASTOR-OIL may be so palatable that a patient will not recognise it, if it is made into an emulsion containing castor-oil $\frac{3}{4}$ i., tinct. cardamom. comp. $\frac{3}{4}$ iv., ol. gaultheriae gtt. iv., pulv. acaciae et pulv. sacchari alb. $\frac{1}{2}$ $\frac{3}{4}$ ij., aq. cinnamoni q. s. ad $\frac{3}{4}$ iv.; misce secundum artem. German children are even said to quarrel over the confection of castor-oil made into a paste with either about three parts of coarsely granular sugar or two parts of comp. liquorice powder, and flavoured with a little powdered cinnamon or grated lemon peel.—*Boston Med. and Surg. Jour.*

CUS.

CUS, one of the most certain of taenicides for tapeworm, is prepared, unimpaired in its strength and in a form which does not excite repugnance, by treating $\frac{3}{4}$ ss. of fresh powdered cus with $\frac{3}{4}$ i. of hot castor-oil, and afterwards with $\frac{3}{4}$ ij. of boiling water by displacement, expressing and by means of the yolk of an egg combining the two percolates into an emulsion; adding gtt. xl. of ether, and flavouring with some aromatic oil. This emulsion is to be taken at one dose early in the morning, after a previous fast of nearly a day. The worm is usually expelled dead after about six to eight hours.—*Boston Med. and Surg. Jour.*

A METHOD OF PRESERVING RUBBER INSTRUMENTS.

VARIOUS articles and instruments made of rubber are apt with time to become dry, to crack, grow brittle, and lose their elasticity. Dr. Pol (*St. Petersburg Vrachebn. Vedomosti*, March 6, 1880) recommends the following simple mixture:—R. Water of ammonia one part, water two parts—in which the articles should be immersed for a length of time varying from a few minutes to one-half or one hour, until they resume their former elasticity, smoothness, and softness.—*N. Y. Med. Record.*

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VIII.—*Practical Notes on some Local Forms of Eczema.*

By J. MAGEE FINNY, M.D., Dubl., F.K.Q.C.P.; Visiting Physician to, and Lecturer on Clinical Medicine and on Dermatology in, the City of Dublin Hospital.

As well in general as in hospital practice, hardly a day passes without the physician being called upon to treat cases of eczema. In common with my fellow-practitioners, this has been my lot; but, as for several years I have directed much attention to diseases of the skin, and as I hold a special dispensary weekly at the City of Dublin Hospital for such cases, I have been afforded opportunities of studying dermatology, in numbers and in variety, enjoyed by very few in this city; and I have treated, therefore, a very considerable number of cases of eczema in every stage, and of every variety.

This experience in the management of the various affections of the skin, met with in a metropolitan dispensary, enables me to confidently assert that there are very few diseases, if any, which will tax the powers of accurate diagnosis and successful treatment more than eczema. It is a matter of regret that more attention, on the part of students and practitioners, is not given to the management of eczema, for, irrespective of the difficulties attendant on its treatment, and the demands it makes on a physician's therapeutics, its very frequency ought to place it in the foreground as deserving particular study.

Of the protean varieties of eczema it is not my intention to speak. I desire to address myself to the disease as it presents itself on the fingers and in some other special localities, because these varieties are passed over in a few, generally short, sentences in the treatises on skin disease, which give the practitioner but little aid, and because eczema in these places is, more than elsewhere, troublesome to treat, and annoying to the patient. The inflammatory processes are, indeed, pathologically identical with eczema of any other part of the body, and many of the prominent symptoms may be alike, still they present in these localities features peculiar to themselves.

I. ECZEMA DIGITORUM.

Eczema, it is well known, may attack any part of the body from the head to the feet, but it nevertheless has its preferences—similarly to psoriasis, erythema, and herpes—as to locality, and as to the surface of the part attacked. In contrast with psoriasis, which usually selects the knees and elbows, and the extensor surface of the extremities and the back of the trunk, eczema attacks, in preference, the flexor surfaces of the limbs and of the larger joints. It makes, however, an exception in the case of the fingers, for it is most commonly situated on the backs of the fingers, or, more rarely—and this only on the thumb and little finger—all round the front and back. This, at least, is the rule when the eczema is limited to this locality, or associated with other local forms, as of the scrotum or anus. It is, however, not so limited when the eczema of the fingers is but part of general eczema affecting the whole body, or when its cause is some local irritant such as is met with in washerwomen, dyers, bakers, bottle-washers, grocers, &c. In this latter case the eczema is on the backs of the hand or wrists, as well as on the fingers. This was well exemplified in a washerwoman who consulted me for a patch of eczema occupying the front of both wrists, the left being the worst; it was also on the fingers of both hands, especially the right. It appeared that in washing she was in the habit of rubbing the clothes, when soaped, against the left wrist by the palm of the right hand.

When eczema makes its appearance, in an acute form, on the fingers, there is almost none of the erythema so common in eczema of the face or elsewhere; it consists almost entirely of numbers of vesicles, which are very minute—as small as rape-seed—which cluster so closely as to involve the whole of the skin of the part

attacked. It is limited to either one finger, or even part of a finger, or else it involves all the fingers of one hand, and a small portion of the skin of the back of the hand near the fingers. By a good cross light the contents of the vesicles can be detected, and their nature demonstrated by puncturing them with a needle. As the disease becomes chronic, its vesicular character disappears, except perhaps at the edges of the patch where it may extend itself; the skin is found infiltrated, dense, and thick, and this is soon followed by stiffness of the joints, cracking of the skin over the knuckles, and raw, painful, and bleeding fissures (*eczema rimosum*). It is also at this time slightly scaly or "scurfy" at its margins. Were it seen for the first time at this stage, there is little remaining of the characteristics of eczema to betray its true nature. It is rarely, if ever, accompanied by the exudation from which the disease derives its name, and which is so common in other varieties. With the symmetry that obtains, as a rule, in every form of eczema which is not due to local irritation, a similar patch may be seen on the fingers of the other hand, though it is rare to find it to an equal extent.

The most prominent symptom of eczema of the fingers is pruritus, and indeed this itching often first calls attention to the eruption. It is present at every stage; at first it is more of a tingling sensation, relieved by firm pressure, but in the stage of infiltration and squamation it cannot be allayed by less than the liberal use of the nails. This pruritus is common in every variety of eczema, and so severe is it at times, when the disease is situated in the scrotum or in the eyebrows, I have known the scratching to be carried to such a degree as to remove every hair from the affected part.

Eczema digitorum is very chronic in its course, and, with seeming improvements, it recurs again and again with increased severity. Hebra thus writes of it:—"Of all varieties of eczema the most obstinate and difficult to cure is that which attacks the fingers, and here it is also peculiarly liable to recur."

Of the many other varieties of eczema and dermatitis engaging the hand and fingers, which are caused by mechanical irritants attendant on several trades and occupations, I wish to refer to only one—a very common one in winter and spring, which occurs in nurses, and those who are engaged much in washing. It is extremely painful, rendering the hands almost useless, and yet it is very readily cured. I mean the inflammation attacking

* Hebra. Vol. IV. P. 122. New Syd. Soc. Trans.

the distal phalanges close to the nails. Deep and wide fissures ensue, so that the fingers are rendered useless for needlework, or indeed for any other work, and they are so painful that often rest at night is broken and disturbed. Several treatments have been suggested, but there is nothing which I have found to come up to frequently coating the fissures, and the ends of the fingers generally, with a solution of gutta-percha dissolved in chloroform. Painful at the moment of application, it soon gives the greatest relief, and has the advantage of not requiring the patient to give up her work, even for a time, and of not heating the finger, as india-rubber finger-stalls are likely to do. I have employed collodion flexible in similar cases, but it has not answered at all as well as the chloroform solution.

Excluding mechanical and chemical irritants and venous obstruction as causes of eczema, dyspepsia, worry, gout, and scrofula are recognised predisponents. In looking through the notes of my cases of *localised* eczema digitorum, I find the majority occurred in persons over thirty years of age, and that no case in children presented itself to my notice. Those under thirty generally conformed to the type of scrofula, while many of those over thirty exhibited characters of gout. At the time of the rash it was noticeable that in neither class was there any pronounced type of the respective diathesis present, as if the *materies morbi* were not sufficient to cause either a gouty paroxysm or pulmonary congestion, but expended its force on the skin. However that may have been, it was a great help to the treatment to recognise either scrofula or gout as factors in the case, and it is a point, I consider, which should not be overlooked in the management of such cases. There is another class of patients in which I have noticed eczema to be of frequent occurrence, which does not come exactly under either of the above heads. It is that of overworked nervous persons with much anxiety of mind, such as governesses or mothers of large families. In these cases the benefit which has followed upon the use of pure phosphorus was at once gratifying and remarkable.

The diagnosis of eczema digitorum is not, in general, a matter of any very great difficulty; but when it is seen for the first time in one or more of its peculiar phases, or, perhaps, after various applications have been tried, into which sulphur, or some of its preparations, have most probably entered, the diagnosis is not always in practice so easy as it may at first appear. The disease,

of all others, with which I have found it has been most frequently confounded by patients and doctors is *scabies*; and from this disease I have had, at times, considerable difficulty in distinguishing it. As a case in point, quite recently a clergyman consulted me for an itching in his fingers, and an irritable rash on different parts of the trunk. He was a sufferer for several years from rheumatic gout, of which, by visits to various watering-places abroad, he had become tolerably well rid; but for the last three months patches of eczema had appeared on his thighs, nates, and back. He consulted some London physicians, and, under treatment directed against the gouty symptoms which accompanied the eczema, he became almost quite well. During the three weeks preceding his visit to me, although the eczema seemed better, he experienced much itching in the hand and on the fingers. The question submitted resolved itself into this—Was this irritation of the hands an extension of his original gouty eczema? or was it a coincident attack of scabies? Careful observation led me to the latter view, and a cure was thereby effected in three days.

There are, however, very many points in common which render the diagnosis difficult, and particularly so when scabies attacks adults of strict personal cleanliness, and who are in the habit of frequently washing their hands. In such patients one never meets with the pronounced gross features of scabies of the “great unwashed.” The situation being on the fingers and often the interdigital spaces, the intolerable itching augmented by heat and the existence of vesicles, make the resemblance very strong. In distinguishing between them, it is well to recognise the greater frequency of scabies at all ages, and especially in the young, in every station of life, as compared with eczema digitorum. Vesicles are present in both eczema and scabies, but in eczema they are small, uniform in size, and clustered—involving a large part of the finger; the skin, moreover, becomes infiltrated and thickened, with various cracks over the joints, and the seat of the disease is accurately defined; while in scabies vesicles occur only here and there on several fingers, wherever the young acari lie, and beside the burrows of the females, and hence they are few in number and discrete; again, they are found on the palm and wrist, at the head of the ulna, as well as between the fingers. Moreover in scabies, in certain irritable skins, a number of secondary eruptions—erythema, pustules, bullæ, and scabs—may be detected about the hand, on the wrist, and palm, and extending up the arm. The very irritation differs, for

the itching of scabies is stated to be less unpleasant than that of eczema, and to be free from the smarting and tingling of the latter.

Should the eczema digitorum be but part of general eczema, with itching in different parts of the body, it will not follow the course of scabies, for the latter shows itself wherever the insect is carried by the finger-nails, or where the clothes by their tightness foster the acarus—thus at the waist and under the breasts in women, on the shoulders and on the dorsum of the penis in men.

A matter of care in every case, the diagnosis becomes a matter of considerable difficulty when an original scabies has been so persistently and energetically treated by inunctions of sulphur that a true irritative eczema is superinduced, and, not being recognised, but looked upon as part of the original complaint, is still further aggravated by increased activity of treatment.

Under such circumstances—and they are by no means as rare as those who see little of skin diseases might imagine—an accurate diagnosis can be arrived at only when soothing treatment has been employed, and the sulphur totally suspended for a few days. The scabies may then be found cured, and the eczema, the result of too strong and too vigorous medication, will be sufficiently defined to be recognised. Should doubt still exist, the discovery of the acarus will decide the question.

In addition to scabies, the fingers may be the seat of other cutaneous affections—such as lichen, psoriasis, tinea circinata, impetigo, dermatitis exfoliativa, pityriasis rubra, and the syphilitic dermatata. It is, however, hardly necessary to delay upon the resemblances which, according to some authorities, exist between them and eczema, as sufficient has been said to point out the distinguishing features of eczema, so that, with ordinary care, a diagnosis may readily be made.

The treatment of eczema digitorum conforms closely to that of eczema rubrum of any other part of the body. A few general rules which I am in the habit of observing in such cases may not be out of place on the following points:—

1. Internal medication.
2. Diet.
3. Washing.
4. Local treatment.

1. In opposition to the very positive statements of the late Hebra—of the uselessness and inertness of internal administration of medicines in eczema—I have had very marked success from their

employment, and I advise it, even though it prove but an aid to local means of treatment. If, moreover, we discard these cases of eczema which are produced by local causes and which may be successfully treated by the suspension of such irritants, and if we look upon eczema of the fingers, or elsewhere, as but the local evidence of a general constitutional crisis, I consider we owe it to our patient to remove or limit, by medicinal and dietetic means, the *materies morbi*, and to treat his disease of the skin on the same scientific grounds as would guide us in cases of inflammation—acute, subacute, or chronic—of any of the mucous membranes.

Remedies which favourably influence the general constitution are suggested even by the knowledge of the effect of constitutional disturbances on the development or on the arrest of eczema. As familiar instances, I would refer to the outburst of eczema (usually *E. pustulosum*) in unhealthy infants (but who previously showed no skin disease) which may follow upon vaccination, and which has been most erroneously and too hastily attributed to vaccination; and again, the rapid, and for the time being, effectual disappearance of chronic eczema by the onset of a febrile attack, or of one of the continued or exanthematic fevers.

My practice in treating a patient with general or local eczema is at once to relieve the portal circulation by mercurial and saline cathartics; to correct dyspeptic symptoms by acids, or (as may be indicated) alkalies, in some bitter vegetable infusion; to call the kidneys into functional activity by diuretics; to restore failing nerve energy by phosphorus; and to meet the gouty tendency by colchicum and alkalies, or the scrofulous by cod-liver oil and some preparation of iron. The acknowledged efficacy of certain natural waters—such as Harrogate, Strathpeffer, Aix-la-Chapelle, &c.—in chronic eczema is doubtless due to their action upon the liver and the kidneys.

2. In like manner I pay particular attention to diet—limiting the albuminous and saccharine food, and forbidding the use of fermented liquors, and enforcing fresh fish and vegetable diet. Neglect of these and similar points often retard recovery in a very notable way.

3. Another subject to which I direct the patient's attention is that of *washing*. Usually I find that eczematous parts are washed much too frequently. It is an everyday experience (especially among private patients) to hear a mother say, that no matter how often she wash it she cannot keep her child's face clean of the scabs and crusts of eczema; while in truth, by her over-zeal, she is frustrating

the curative process of nature, which, until disturbed, was proceeding beneath those crusts. As a rule, speaking generally, it is best not to wash an eczema very often—certainly not more than once a day, sometimes not once a week—and then only for the purpose of removing the exfoliated epidermic scales and any ointments or applications which might otherwise irritate the skin. In such cases I do not recommend soaps, instead I advise oatmeal-tea, or rain or soft water, to each pint of which one tablespoonful of glycerine has been added and two tablespoonfuls of finely-powdered starch.

4. Local treatment is, doubtless, the most important in eczema. In the acute forms it should consist of some bland soothing fluid, or, if there be much exudation, some absorbent and slightly astringent powder. When the disease is more chronic, and all heat and redness has given place to induration and scales, the latter should be removed by inunctions and poultices, and the former by stimulating applications. It is in the judicious employment of these remedies, and in the steady perseverance in their use when once decided upon, that such cases can be brought to a successful termination.

Reverting to the subject—that of local eczema of the fingers—the treatment I have found to answer best is—

(a). In the early or acute stage, while there is but little thickening, to apply on strips of old linen wrapped round each finger, and covered with a glove, either ungu. hydrarg. ammoniat., of the strength of $\frac{3}{4}$ i. ad $\frac{3}{4}$ i., or equal parts of vaselin and the oleate of zinc (introduced by Mr. Crocker). If there be much tingling or itching I add to each ounce $\frac{m}{x}$. of chloroform, or $\frac{m}{xij}$. of acid. hydrocyan. dil. The ointment should be allowed to remain undisturbed for about twenty-four hours. It should then be well washed off in oatmeal-tea, and fresh ointment on fresh linen reapplied.

(b). When induration exists, stronger and more stimulating ointments may be employed, or, what will answer better at first, macerating the skin by a water poultice, or by simply covering the finger with an india-rubber finger stall. It should be closely fitting, but should not interfere with the return of the venous blood. If the patients can wear these rubber finger-gloves, very rapid improvement will be seen to follow; the skin becomes pliable, soft, and thin, the scales disappear, and the rhagades close up, and the oleate of zinc ointment, or one made of bismuthi nitras ($\frac{3}{4}$ i. ad $\frac{3}{4}$ i.), will speedily complete the cure.

Unfortunately, it is not every patient who will be persuaded to persist in the rubber treatment; their general objection is that the finger becomes so hot, and throbs so, that they either entirely desist from its use, or employ it so irregularly as to nullify all good effects. In such cases I have found Hebra's diachylon ointment, as modified by Kaposi, of the greatest service. Hebra was in the habit of treating indurated patches by rubbing in liq. potassæ till the thickened epidermis was dissolved, and the surface was covered with bleeding points; but I confess that, in my experience, Irish patients will not submit to such treatment; for what reason I know not (except it be that their nervous system lies nearest the skin!), and that they who would, without a protest, submit to strong internal remedies producing considerable pain, will wince under, and protest against, remedies which, when applied to the skin, cause slight pain and uneasiness.

For the itching, which is sometimes very severe in the stage of infiltration, there is no remedy so efficacious as tar, and it may be employed either in the form of an alcoholic solution in combination with soap (saponis mol., ol. picis vel cadini, alcohol $\ddot{\text{a}}$, partes sequales), or what I find answers better in an ointment such as this:—

B. Cremonis frigid., 3 i..
Ung. picis, 3 iij.—3 vi.
Zinci oxidi, 3 i.
Hydrarg. ammoniat., 3 j.
Vaselini, ad 3 ij. Ft. ung.

In the words of Hebra (p. 163), “I would urge, in conclusion, that whatever course be adopted in treating chronic eczema, constancy and perseverance are of the utmost importance. He who is always changing his plan of treatment is sure not to attain his object so quickly as one who steadily and patiently applies whatever remedy seems best suited to the case.”

ART. IX.—*Obstetric Report of the Cork Maternity for the Three Years ending September, 1880.* By T. GELSTON ATKINS, M.D., M.Ch., B.A.; one of the Physicians to the Hospital.

SINCE the last Report of the Cork Maternity was published, the institution has continued the work it so well carried on during the first five years of its existence. In the year 1879 the attendance reached the large number of 422 cases, being an increase of 150

cases over the year 1878, and the increase will probably be still larger this year. Since the Maternity was opened in 1872 the total number of cases attended by its staff has been 2,648, and the total number of *maternal deaths* from all causes (in 8 years) was only 17—i.e., a mortality of .6 (nearly) per cent., which is, I need hardly say, excessively low—a fact conclusively proving the value of maternity charities, in not crowding such cases together in hospital wards. As heretofore, the students of the Queen's College have largely availed themselves of the great opportunity the Maternity affords of gaining a sound practical knowledge of this most important branch of their studies, prior to entering on professional life, whilst every three months two resident clinical assistants have been appointed from the more senior students. During the last session the greater majority of the students have each attended between 30 and 40 cases, and some considerably more; this is, I may observe, a great improvement on the old state of things, when students considered they were thoroughly and practically trained after they had seen the *necessary* 6 or 10 cases, the number prescribed by some of the examining bodies. Lectures on the more important cases, as well as on practical midwifery generally, have been delivered from time to time in the hospital, and a competent staff of nurses are being constantly trained. The mortality is extremely low, and the more so when we consider the surroundings of the majority of the cases—the want, misery, wretchedness, filth, and drunken friends. I am happy to be able to report the still further immunity of the Maternity from puerperal fever, either of idiopathic or of septicæmic origin.

Subjoined are the most important statistics gathered from the obstetric registers of the hospital. Some of the cases are of great interest, and will be reported in full from time to time:—

STATISTICS.

Total Number of Labours.—Natural, 878; difficult, 39 (including 5 face presentations); præternatural, 31; complex, 73; abortions and miscarriages, 17. Total, 1,038. Total number of cases since the Maternity was opened, 2,648.

Difficult.—Irregular action of the uterus, 19; rigid os, 8; disproportion between pelvis and head, 7; face presentations, 5. Total, 39.

Præternatural.—Breech and lower extremity, 26 (including 7 footlings); upper extremity, 5 (3 left, 2 right). Total, 31.

Complex.—Twins, 7; placenta prævia, 4; accidental haemorrhage,

2; *post partum* haemorrhage, 21; retained (including 9 adherent) placentæ, 31; prolapse of funis, 6; convulsions, 1; hydatids, 1. Total, 73.

Operations.—Forceps, 33; versions (podalic and bipolar), 9; craniotomy, 3. Total, 45.

Still-born children at full time from all causes, 38; abortions and miscarriages, 17; deaths of children after instrumental delivery (including 3 craniotomy cases and 1 syphilitic), 7; deaths of mothers, 3.

Causes of Maternal Deaths.—Pneumonia, 1 (died eighth day after delivery); exhaustion after labour, 1; this was a breech presentation, accompanied by placenta prævia. The patient died on the third day, never recovering her strength. I was informed that the only food the patient had for three days prior to her confinement was a cup of tea. Scarlatina, 1; the rash appeared of a dusky colour on the second day after delivery. The patient was removed to hospital, dying on the fourth day after delivery. This was the only case of puerperal scarlatina that occurred, notwithstanding the severe epidemic that prevailed in the city during the end of last year and the early part of the present. This patient never had scarlatina when a child, and resided in a neighbourhood where the disease was rife. The baby did not take the disease. It will be thus seen that none of the deaths were directly due to childbirth.

Difficult.—Of the 39 cases of this class, 19 were due to irregular action of the uterus—we find in these cases that the proper application of the binder before delivery is most useful, especially when there is any obliquity; 8 to rigid os—these were treated with sulphuric ether and opium; 7 to disproportion between the pelvis and head—one of these was a hydrocephalic head. The remaining 5 were face presentations.

Præternatural.—One of the 5 cases of presentation of the upper extremity was an instance of spontaneous expulsion; in 2 the children were still-born.

Complex.—Of the 4 cases of placenta prævia, one occurred in a case of breach presentation (the third position). There was most alarming haemorrhage. This patient died on third day after delivery, never recovering the shock. The others did well.

Post Partum Haemorrhage.—There was no death from this cause. The prevention of such complication is always attended to, firm compression of the uterus being invariably kept up until the

application of the binder. One case of this kind that came under my notice is of special interest. The patient in her five previous labours was at "death's door," to use her own expression, from haemorrhage. The room was full of buckets of cold water. On inquiry what they were there for, the patient told me "they would all be wanting yet to stop the bleeding." The pains were short, sharp, and coming on only at intervals of half an hour or so. I determined to try friction. Accordingly "circular friction" over the uterus was kept up for ten minutes at a time, at intervals of a quarter of an hour. The effect of this was that the pains became more regular, and recurred with greater frequency. A double dose of ergot was given as the head descended, and labour was completed *without* a sign of *post partum* bleeding. The injection of warm water was used with complete success in 5 cases. Perchloride of iron was not used at all. Had the warm water not succeeded in the previous cases, most probably the perchloride would have been resorted to. The remaining cases yielded to compression of the uterus, cold over the pubes, and to the vulva. Of the 6 cases of prolapse of the funis, 4 of the children were still-born; in 1 of the remaining 2 the forceps was used; in the other the cord was replaced and the woman kept in the "knee elbow" position until the head advanced.

Forceps.—The forceps generally used in the Maternity are either Simpson's or Barnes' long forceps. I prefer the latter, provided there is not too much spring in the blades of the instrument. There was no maternal death after the use of the forceps. It was applied in 33 cases (or 1 in every $3\frac{1}{2}$ labours nearly). It was applied in all cases where its use was clearly indicated. Two of these were followed by symptoms of metritis, one recovered completely, the other was lost sight of before she was well. In this latter case considerable and prolonged force was used. I was sent for with a view to perform craniotomy. Of the 33 cases in which it was applied 4 deaths of the child resulted. In one the foetus was completely decomposed—there was a history of syphilis; another occurred in a case of funis presentation; in a third, no foetal sounds could be detected prior to the application of the instrument. Therefore, in only one case can death be put down to the use of the forceps. The indications in the majority of the cases were uterine inertia and rigidity of the maternal soft parts, occurring in primiparae. One of these is of special interest, the presentation being face to pubes, and the labour complicated by a fibrous tumour, about the size of a hen's

egg, growing in the anterior uterine wall, hour-glass contraction at the lower margin of the tumour, retained and adherent placenta. After detaching and bringing away the placenta I endeavoured to enucleate the tumour, but so much force being requisite I desisted, fearing inversion or metritis. The case occurred in June, 1879. I saw this patient about a month since; the tumour is completely absorbed, the uterus measuring three inches with the sound. This tumour was detected previous to her pregnancy. In 7 cases the conjugate diameter was contracted, 2 of these being delivered in five and four previous confinements respectively with instruments. The forceps was used in one case of placenta *prævia*, subsequent to the arrest of the haemorrhage, symptoms of powerless labour setting in. The instrument is not applied in the Maternity until the os is fully dilated or *dilatable*; this is considered essential to the safety of the mother. A dose of ergot is usually given as soon as traction is commenced.

Version.—There was no death after version. Of the 9 cases, 5 were for transverse presentations; in 3 of these the child was born alive. The other 4 were for contraction of the conjugate; in 2 of these the child was born alive. One of the remaining 2 is of special interest. The patient was in her fifth labour. When a child she had sacral disease; her first two labours were natural, but tedious; in the two following the forceps was used, being applied in the second of these with great difficulty; in her fifth there was notable contraction of the conjugate due to a sacral exostosis. Repeated efforts at delivery were made with the forceps by myself and Prof. Macnaughton Jones, who finally turned, but had subsequently to perforate to complete delivery. This case was followed by sharp *post partum* haemorrhage, which was arrested by the injection of tepid water. She made a complete recovery.

Craniotomy.—There was no case of maternal death after the operation. In the 3 the foetus was dead prior to perforating. One was for a pelvic exostosis, the other 2 for contraction of the conjugate diameter. There was no case of evisceration.

ART. X.—*Two Cases of Abscess of the Liver, with Remarks.**

By TRAVERS B. BARTON, M.D., Univ. Dubl., L.R.C.S.I.; late Surgeon in the Peninsular and Oriental Steam Navigation Company's Service.

THE following cases of abscess of the liver, which lately came under my observation, present several features of interest, not less practical than they are suggestive. I will first detail the clinical histories of the patients, and subsequently offer a few remarks on the cases immediately before us, and on tropical abscesses in general:—

CASE I.—On March 18th, 1879, I first saw Mrs. V., aged thirty. She had been in India for ten years; is married, and has had two children. During last autumn she suffered from dysentery, but before that she had always enjoyed good health. In November she suffered from pain in the region of the liver; for this she was blistered. Her physician informed her that she had perihepatitis. On December 26th, 1878, she began to feel much worse, and towards the end of January, 1879, she first perceived a swelling in the right mammary line below the ribs. On the 28th she coughed up about a pint of reddish-brown pus. Every day since she has coughed up at least a cupful of the same stuff, mixed with mucus.

This morning (March 18th) she was carried on board ship (at Bombay), and placed under my care. She complains of constant pain in the right shoulder; the skin was so extremely tender, owing to frequent applications of iodine, that she would not allow a proper examination to be made. Pulse 80, very feeble; suffers from cardiac palpitations. In spite of frequent opiates, she has had little sleep for a long time. Ordered beef-tea, egg-flip, and $\frac{3}{4}$ g. of brandy thrice daily.

19th.—Pulse 80, weak and compressible; severe pain in the regions of the liver and of the heart. I gave $\frac{1}{4}$ th of a grain of morphia hypodermically; pain relieved five minutes afterwards; in ten minutes she said she felt very comfortable, and inclined to have a sleep. I again tried to examine the chest, but she refused to be percussed, and, owing to the noise in the ship, the stethoscope was useless.

20th.—Slept well for five hours after the morphia, but feels hot. Pulse, 120; temperature, $103\cdot4^{\circ}$; palpitation of the heart troubling her greatly. I prescribed $2\frac{1}{2}$ grains quinine sulph., with 10 minims of tr. digitalis, and 5 grains of potassium iodide to be taken three times during the day, also $\frac{1}{3}$ rd of a grain of morphia every day at 6 p.m. Yesterday patient remarked that the sputa were not so red as usual; to-day they

* A Thesis read for the degree of Doctor of Medicine in the University of Dublin, June, 1880.

are composed of yellow pus and mucus. Evening temperature, 102·6°; pulse, 130. She felt great ease after the pill; is now perspiring freely.

21st.—Morning temperature, 103°; pulse very compressible and intermittent; slept well during the night. Evening temperature, 101·9°; pulse, 128, steadier; took a considerable quantity of nourishment, chicken broth, &c.

22nd.—Slept soundly; is very drowsy (got hold of the pills, and took three instead of one); pulse, 135. Morning temperature, 101·5°. Evening temperature, 102·8°; pulse, 132.

23rd.—Morning temperature, 102·5°; pulse, 160; feet swollen; pitting on pressure; no albuminuria. Evening pulse, 120, feeble and intermittent.

24th.—Morning temperature, 104°; respirations, 44; pulse, 144. Complains of great pain in the back, under the ribs (relieved by linseed and mustard poultices); no signs of abscess pointing, but the intercostal depressions are obliterated. Sputa simply mucus to-day. I increased the dose of quinine to five grains.

25th.—We arrived at Aden last night. I saw Mrs. V. at 4 a.m.; owing to the great noise of working cargo she had no rest during the night. Pulse, 130. She begged for the morphia at any price. I gave about $\frac{1}{4}$ th of a grain hypodermically, as before. A few minutes before 6 I again saw her; she had slept after the morphia, but soon awoke again with the noise of the winches. She then took some port wine; soon afterwards she became unconscious, and now was unable to swallow. She died about a quarter of an hour afterwards. I was then told she had had severe diarrhoea the evening before; the stools were fluid, but healthy; in them I found five or six long round worms, evidently *ascarides lumbricoides*. I greatly regret that I was unable to make a *post mortem* examination.

CASE II.—On April 20th, 1880, I was requested by Dr. Beaumont, Surgeon to the S. S. "Deccan," to see John S. He had been resident in India about fifteen years, but until about six months ago he had enjoyed tolerably fair health. He then began to suffer from dysentery, from which he has never completely recovered. About a month ago he had a considerable amount of pain in the region of the liver. This continuing, his medical adviser sent him home from Bombay on April 3rd, having informed him that he had not yet got an abscess in his liver, but he believed one to be forming, and, considering his state of health, his only chance of life was to go home immediately. Up to the present day he remained below, extremely prostrate, and taking little nourishment; occasionally he had attacks of dysenteric diarrhoea. He now seemed to be very low; pulse very weak, 130. To the eye one side seems just the same as the other; no bulging anywhere. He complained of a constant

hacking cough; this pained him a great deal. Very slight expectoration of tough mucus. A few coarse râles could be heard over the lungs (noise of ship too much for stethoscope). To-day he has severe pain extending from the margin of the right ribs to within three inches of the pubes; this is most severe on pressure just below the ribs. On percussing in the right mammary line, I found the area of hepatic dulness to extend upwards as far as the upper margin of the fourth rib, and downwards to two finger breadths below margin of ribs. I was unable to examine the liver posteriorly. The temperature had not been registered higher than 101°. During inspiration the intercostal spaces felt fuller to the hand on the right side than on the left. As we came to the conclusion that an abscess was causing the peritonitis, and pressing upon the lung, we determined to operate. At the patient's request I administered chloroform. Dr. Beaumont then introduced an aspirator needle in the right mammary line, just below the last rib, directing it upwards about two inches; five ounces of brick-red coloured pus were withdrawn, and, as the cavity now appeared to be empty, the needle was withdrawn, and the puncture dressed antiseptically; there was no odour from the pus.

21st.—Patient quite free from pain.

23rd.—Cough very troublesome, causing great pain; he is much the same as on the 20th as regards strength; cannot take any quantity of nourishment. Aspirator needle again introduced, but pointed more forward and upward than last time; some fifteen ounces of greenish pus were drawn off; the needle was then pushed upwards, when it seemed to have entered another cavity. Pus again flowed freely through the needle. I twice altered the direction of the needle, each time seemingly entering a fresh cavity, till forty ounces of pus were removed; this was very foetid.

24th.—Patient feels free from pain; cough continues, but not so severe (no pus in sputa). From this time he gradually sank, and died of exhaustion on the 28th.

Post Mortem Examination.—After removing all the ribs on the right side (from the third) to within a few inches of the spine, a mass of greenish pus was exposed; this was divided with a kind of network of broken-down liver tissue, which had evidently formed the various walls of the abscesses. When the pus was removed the diaphragm was found to be displaced upwards, and in it were two small openings, one of which was only just through its substance; the other would allow a slate pencil through it, but for only a short distance, as it seemed to end in the tissue of the lung close to its margin. I need hardly add that there were extensive pleuritic and peritoneal adhesions. The rest of the liver, gall bladder, &c., were quite healthy, all the mischief being confined to the right lobe.

In the first case I think the points of interest to note are:—
1. The difficulty of diagnosis. The case was treated by one of the most experienced Bombay doctors, who had been in the country several years, and yet abscess was not diagnosed until pus had been expectorated. 2. Though a case of hepatic abscess occurring after dysentery in the tropics, I believe that it was multiform. I cannot otherwise account for the persistent pain, high temperature, want of appetite, and general febrile symptoms, two months after the primary abscess had opened. 3. The beneficial effect of the sea voyage, the brick-red sputa changed in three days to simple mucus—yet the change, I think, was gradual enough for the remains of the abscess to have healed.

In the second case, considering the rapidity with which the abscess formed, it is remarkable how little fever there was; and, secondly, the persistent, hacking cough, and yet no sign of pus having made its way into the lung. I think this can be explained by the extreme feebleness of respiration, and that once the pressure was removed by aspiration, there was not so much tendency for the matter to burrow through the lung-substance.

I am inclined to agree with Dr. Beaumont that the opening existed in the diaphragm some days before death; probably some air had been admitted into one of the abscesses in this way, and had caused the pus to be so fluid at the second time of tapping. Unmistakably this was a tropical case following dysentery where several abscesses had formed. At the autopsy we could clearly make out traces of the walls of at least three. Another point of interest was that, when we had apparently emptied the cavity, by introducing the needle in a different direction we came upon a fresh supply of pus, greater in amount than that at first evacuated. May not some of the cases where a hepatic abscess has been emptied and small relief followed be similar to this one?

In both cases we have well-marked pain in the early stage of the disease. In neither case did a rigor ever occur. Both were rapid in their formation—that is, if we regard them as tropical abscesses distinct from pyæmic; and both cases are, unfortunately, examples of what still occurs much too often—patients are sent to Europe to recover when they have little or no chance of surviving the voyage.

I am inclined to believe that these cases were to a great degree pyæmic in their nature, and that when twenty years ago Dr. Budd said he believed that the majority of tropical abscesses were

pyæmic, he was not far from the truth. In taking this view of the subject I think we must allow a great deal for modifications in the course of the disease by climate and the style of living in the tropics. People who have not been abroad can hardly imagine, not only the variety of food, but the quantity which is eaten. It is not unusual to see ladies taking pegs for breakfast instead of tea and coffee. I have been at a Sunday tiffin which lasted nearly two hours, and which, I am sure, in this country would be styled rather a heavy dinner, as regards the victuals as well as the drinks. If with this style of living we note how little exercise is taken, we can only wonder how so many escape disease in the tropics.

Dr. Moxon asserts that in all cases of tropical abscess signs of intestinal mischief could be detected, if properly looked for at *post mortem* examinations. The late Dr. Murchison denied this; but when even a slight attack of dysentery may escape our notice, I am inclined to agree with Dr. Moxon.

Dr. Murchison considered tropical and pyæmic abscesses as distinct, but to make the distinction he defined the tropical abscess as "a single large abscess." I believe this, however, to be the exception and not the rule, if we only could make autopsies in an earlier stage of the disease.

But the chief question to decide is—What can be done to cure the patient who has been so unfortunate as to get an abscess or abscesses in the liver? I think we are to consider the aspirator in some form or another to be our chief aid, not only for evacuating pus, but also as a help to diagnosis. Dr. Cameron goes so far as to say that not only does puncturing the liver do no harm, but it actually is beneficial in relieving congestion by withdrawing a few drops of blood. I cannot agree with this latter opinion, as I believe that pain from congestion only occurs in the early stage of the disease. I believe we are to use the needle or trocar whenever we see signs of the abscess pointing, and always before this if the patient's health is rapidly failing. If this were done oftener I believe abscesses would be found that were only considered to be forming, and we should soon have a greater percentage of recoveries after operation.

ART. XI.—*Typhus Fever and its Treatment.* By R. FITZ-MAURICE, L.K.Q.C.P.I., L.R.C.S.I., &c.; Physician to County Kerry Fever Hospital.

IT is generally admitted that the red corpuscles of the blood are the carriers of oxygen, and that the iron contained in the haematin is intimately connected with this process—experiment showing that on separating the iron from the haematin it loses its power of combining with oxygen. It is also admitted that the dark colour of venous blood is due more to the absence of oxygen than to the presence of carbonic acid, and that the blood becomes dark also from the fulness of the corpuscles. It is also shown by experiment that the blood remains fluid longer in the capillaries than in the large vessels, and from these facts we may be justified in assuming that the dark rash of typhus, which always indicates a bad case, depends rather on a low state of blood, or on blood that contains less oxygen, than on virulence of poison or accumulation of it. It seems to me that when a dark rash appears the blood is in such a state as to render it an easy prey to the typhus poison, and that when the poison comes in contact with such blood it disorganises it easily, probably by the abstraction of oxygen, and the blood, being possibly more fluid, freely exudes and gives rise to an abundant and dark-coloured rash. In the operation of vaccination this difference of blood is often seen. In the poorly-fed children that live in unhealthy lanes the slightest scratch brings dark-coloured and very fluid blood, whereas in healthy country children quite the opposite obtains—the blood being bright red, and not so thin or fluid. From these preliminary remarks it may be inferred that my view of the action of the typhus poison differs from that which is generally received. The accepted theory supposes that the poison, on entering the blood, acts in the way of catalysis, or as a ferment, reproducing itself, causing disintegration of tissue, and giving rise to compounds which, being reabsorbed, poison the nervous centres—the process of disintegration or metamorphosis over-balancing that of elimination, and this state being attended with increased temperature, which is supposed to depend on increased combustion. This theory, though plausible, may be incorrect, and, if so, the treatment founded on it must also be erroneous. I am not inclined to say decidedly that this theory is wrong, which would be too sweeping an assertion, but I have reason, from experience, to doubt its accuracy, and to substitute another which may

appear as visionary, and yet be less fallacious. It is—that the primary action of the poison is on the red corpuscles; that it abstracts oxygen, and may possibly form compounds that give rise to increased temperature; that this blood deprived, to a certain extent, of oxygen, is unfit to stimulate the nervous centres, and the result is the serious and nervous symptoms which are observable in bad typhus, and which appear to depend on withdrawal of nervous power or perverted nervous action. According to this view, the object of treatment ought to be to supply to the blood the element which nature has selected to assist in carrying on one of its most important functions—namely, the transmission of oxygen to the tissues, and especially to the nervous centres, and this remedy is found in iron, which I have been in the habit of using latterly in all bad typhus cases, and with apparently the very best effect—such a direction of treatment differing from that which the received theory suggests, which is to prevent the more distant effects of the poison, and to attain this object acids and alcohol are given, and efforts are made to eliminate the poison and the effete nitrogenous tissues resulting therefrom. It is also proposed to give chlorate of potash or some such remedy to supply oxygen to the blood, but this is not only theoretical but unnecessary, as we can have plenty of oxygen from the atmosphere if we have only carriers for it. It is likely that more oxygen is taken into the blood in a few respirations than can be received from any quantity of chlorate of potash, and the point is to utilise it.

We have unmistakable evidence of the good effects of iron in bringing colour to the chlorotic or anaemic patient, and I believe it enables the red corpuscles to resist the action of the typhus poison and to preserve their integrity, if given in time, before much disorganisation sets in; but we give acids merely on an assumption of their value with very slender proofs of it. I would not by any means advocate the total rejection of acids,^a which are time-honoured; they may be used in mild cases, but in serious cases I have all dependence on iron.

The preparation I use is the compound iron mixture^b—a tablespoonful every third or fourth hour, and if rejected by the stomach,

^a The following is a good prescription for suppression of urine in fever:—Dilute muriatic acid, half a drachm; tincture of digitalis, ten minims; sweet spirits of nitre, half a drachm; syrup, three drachms; and water to one ounce for one draught. To be taken three times a day.

^b Iron does not influence diarrhoea nor constipation, and therefore may be continued when acids must be stopped when diarrhoea is present.

which is rarely the case, I then give the carbonate of iron in the form of electuary, which is sure to be retained.

Regarding stimulants, our great observers have recommended much caution in their administration, but this advice appears to be often disregarded, and occasionally by some of themselves, as in some of the examples given in their books alcohol is given very freely, although intense nervous symptoms continue unabated to the end.* I think the cases in which stimulants are admissible are very exceptional, and I believe the grounds for giving them are wrongly chosen; the weak, rapid, and sometimes intermitting pulse, with loss of first sound and impulse of heart, or foetal heart sounds, with which are always associated severe nervous symptoms, is a case in which stimulants are generally freely given, on the supposition that the circulation is failing and that there is impending danger; but I think this treatment exhibits temerity and want of judgment, as it seems to me that these symptoms, when there is no evidence of collapse, depend on a nervous impression causing withdrawal probably of nervous power or perverted nervous action, and the indication of treatment in such cases should be to restore the nervous equilibrium by sedatives, counter-irritation of the scalp and back of neck, the administration of iron, and nourishing and unstimulating fluids, always keeping in view the crisis, and that no decided improvement can take place before the thirteenth or fourteenth day. The heart, no doubt, has been found softened by that great observer, Stokes; but, as in most bad cases of typhus, the foetal sounds obtain and not loss of first sound, and the sounds and impulse are so quickly restored after crisis, we may be justified in supposing that, in cases where softening was found on *post-mortem* examination, there was a chronic state of disease before the inception of the typhus poison. It cannot be denied that some bad cases of typhus bear stimulants well, but my experience is that they should be given with great caution, and only at first a tablespoonful of wine and water every third hour or so, and even then watching closely its effects. The case that seems to me to be most benefited by stimulants, at the same time that the head is blistered, is that in which there is a torpid and silent state, with slow pulse, debility, and sleeplessness without excitement; and I am of opinion, though opposed to the experience of some, that stimulants are essential to rapid recovery in the convalescing stage.

When the temperature of typhus runs high with other bad

* Vide Murchison: *Continued Fevers of Great Britain*, p. 188.

symptoms it is a bad omen, but I have occasionally seen a rise of temperature to 105° in young girls without a bad symptom, and I have seen the temperature from 101° to 105° in some of the worst cases, so that though the clinical thermometer is to a certain extent useful in the course of typhus, and of aid in diagnosis, it cannot be depended upon for prognosis. I think it is a mistake to endeavour, by iced drinks and other remedies, to reduce directly the temperature, as the increase of it may be a manifestation of the efforts of nature to eliminate the poison, and we may be counteracting this action by giving digitalis, quinine, &c. We know that when organs are engaged in active secretion there is increased influx of blood, and this is attended with some increase of temperature, and it may be unwise to use special temperature-reducing remedies, which may interfere with other vital actions. I find sponging the body with tepid vinegar and water three times a day not only grateful to the patient but useful in causing action of the skin and preventing increase of temperature; but digitalis, when given with this latter intention, I have only faith in to do harm.

The diarrhoea of typhus should not be interfered with at first, but if it continues for some days it may be moderated with chalk mixture and catechu; if this is not effectual it may be supplemented with a powder containing $\frac{1}{2}$ of a grain of grey and three of Dover's, three times a day. If the diarrhoea continues, 4 grs. of Dover's powder may be given night and morning; and if not lessened, laudanum and turpentine in the following mixture will be found useful:—R. Spt. terebinth., 3 iss.; vitelli ovi, q.s. Misce et adde tr. opii, 3 iss.; syrup., 3 iv.; aquæ cinnamomi, 3 vj. Ft. mistura. St. cochl. i. mag. ter die. If this fails we must have recourse to acetate of lead, and, as a last resource, an enema of starch and opium. In headache in the beginning of typhus a leech to each temple will be found useful, and 4 grs. of Dover's powder night and morning. If it continues, and is unabated, I find that blistering the scalp has a good effect. It is a good rule, in all cases of typhus, to cut off all the hair early in the disease. For sleeplessness, 4 grs. of Dover's powder, to be repeated in an hour; if the insomnia continues, tr. hyoscyam. and bromide of potassium; and, after some time, laudanum or morphia, which should be deferred till other treatment failed. Changing a patient to a fresh bed once or twice a day has a very good effect, and it is often necessary to blister the head.

Excluding mild cases of typhus, which require little or no medical treatment, and the maniacal case with strong pulse which

may be knocked down at once with chloral and bromide of potassium, I append a case often met with which will more clearly illustrate the observations given above. In the second week of *bad* typhus the following train of symptoms, more or less modified, will be met with:—Dark and abundant rash; suffused eye; pupils natural, sometimes fixed upwards; wakefulness, delirium, subsultus tendinum, folding up or picking bedclothes; brown, dry tongue, or soft and white; pulse weak, compressible, and rapid, from 130 to 140, and sometimes intermitting, without signs of collapse; foetal heart sounds, or loss of first sound and impulse; respiration from 48 to 52, temperature from 101° to 105°, incontinence or retention of urine, involuntary discharges from the bowels or constipation, belly either tympanitic or flat. This state of pulse and heart, &c., decides at once for stimulants; and consequently a tablespoonful of wine is ordered every hour, with the ordinary milk, beef-tea, and acid treatment, and some antispasmodics or sedatives. At the next visit, in four or six hours, the pulse will be found about the same, probably quicker, the patient more fidgety, no sleep, an approach to contracted pupils, and not improved in any respect. The next thing often done is to substitute brandy, or brandy and egg mixture, for wine, to bring up the pulse and support the failing circulation; and with what effect?—that this treatment, if continued for eight or ten hours, is likely never to be counteracted, and the nervous symptoms to be aggravated to the fatal result. What, then, should be the treatment in such a case? No stimulants—milk, beef-tea, and milk only if the bowels are too free; scalp and back of neck to be blistered immediately, iron given, and 4 grs. of Dover's powder, to be repeated in an hour if the patient does not sleep. Strangury often occurs from the blister, shown by moaning on the part of the patient, and moving the hands towards the genitals; and then the following draughts will be found useful, not only for this, but for the wakefulness that is present:—
R. Bicarb. potas., grs. 15; tr. hyoscyam., 3*i.*; syrup., 3*iv.*; aquæ ad 3*i.*
Ft. haust. Mitte sex. One every hour, with large quantity of barley-tea. Dilatation of the pupils occurs after taking four or five of these draughts; and on next visit, in about twelve hours, the pulse will often be found to have regained its force and fulness, though continuing quick as before—the weakened state depending not on failure of the circulation, but on an impression made on the nervous centres. The more stimulants are given in such a case the more marked will be the debility and the more

excessive the excitement. Though the patient is quieter the wakefulness often continues, and for this we may repeat the Dover's powder, and if not effectual it prepares the patient for some more potent remedy. Neither opium, nor digitalis,^a nor chloral is admissible for the first twenty-four hours; but as we must expect till crisis an uncertain state, the insomnia often continues or returns and the pulse begins to fail again, and the pupils from want of sleep become contracted. The treatment then is 35 or 40 minims of laudanum in a tablespoonful of wine, which is often effectual, and which under any circumstances should not be repeated for six or eight hours. When the patient falls into a sleep he should not be disturbed for four or six hours, at times feeling his pulse to watch signs of collapse. For complications and a more full description of treatment, the reader may consult Hudson's Lectures and the comprehensive and unrivalled monograph of Murchison.

THE ANÆSTHETIC EFFECT OF COLD UPON THE CORNEA AS A THERAPEUTIC MEASURE.

THE persistence in some cases of diseases of the cornea of the symptoms of pain and photophobia, combined with blepharospasm at times, in spite of the usual treatment, is well known. In the search after an available agent which should render the cornea anæsthetic, it occurred to Dr. Oppenheimer that extreme cold was such a one, and that water at 32° F. (melted ice, in fact) dropped upon the cornea might be efficacious for the purpose. The experiment proved so strikingly successful in his first case that he has since put it in use repeatedly. So far as Dr. Oppenheimer's experience with it has enabled him to judge, it has convinced him that the remedy is a valuable one in most of the cases where disease or injury of the cornea is the cause of pain and photophobia, with or without blepharospasm. The directions usually followed were to drop the water, as cold as it could be gotten from melting ice, into the eye, while the patient himself, or the attendant, held the eye wide open. This was kept up for a few minutes every half hour or hour. As the eye improved, these intervals were lengthened. Other local and general remedies were not excluded.—*N. Y. Med. Jour.*, July, 1880.

^a When there is strong pulse with the *delirium tremens* state of fever, Graves's tartar emetic and opium treatment has sometimes good effect, or chloral and bromide of potassium. Chloral should always be given in draught, as I have seen death occur from accumulation of it given in mixture. A scruple, with the same quantity of bromide of potassium in syrup and water, to be repeated in an hour if required, is the safest mode of administering it. The case of typhus given above, which is so often met with, does not bear chloral or digitalis.

THE BOSTON
SOCIETY FOR
MEDICAL
AGGRAVATION

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Food and Feeding. By SIR HENRY THOMPSON, F.R.C.S., &c.
London: Frederick Warne & Co. 1880. 8vo. Pp. 147.

IN the summer of 1879 two articles from the facile pen of Sir Henry Thompson appeared in the pages of the *Nineteenth Century* review, under the title of "Food and Feeding." At the time of their appearance the attention of both professional and lay readers was so much attracted to these articles that, in compliance with a very wide demand for their republication, the author has since given them to the world in a separate and handy form, thoroughly revised, and with several considerable additions.

The book is written in that attractive, free, and racy style which is so characteristic of the author. It is divided into ten chapters, of which the first three in particular will well repay an attentive study by every practical physician. So admirably does Sir Henry Thompson describe what is necessary to constitute a perfect food, that we offer no apology for the following lengthy quotation from Chapter I., on the Constituents Necessary in Human Food:—

"It would be out of place to occupy much space with those elementary details of the chemical constitution of the body which may be found in any small manual of human physiology;^a but for the right understanding of our subject, a brief sketch must be presented. Let it suffice to say that carbon, hydrogen, and oxygen, the three all-pervading elements of the vegetable world, enter largely into the composition of the animal body; and that the two former combined especially constitute a fuel, the oxidation of which produces animal heat, and develops the force in its varied forms, physical and mental, which the body is capable of exerting. Besides these, nitrogen, obtainable from certain vegetable products, not from all, but forming definite combinations with the three elements just named, is essential to the repair and reproduction of the body itself,

^a "Such as Physiology, Science Primer, by M. Foster, M.A., M.D. (Macmillan); Lessons in Elementary Physiology, by Professor Huxley (Macmillan). For a full consideration of the subject, Dr. Pavly's very complete Treatise on Food and Dietetics (Churchill, London, 1875)."

being one of its most important constituents. Lastly must be named several other elements which, in small proportions, are also essential constituents of the body, such as sulphur, phosphorus, salts of lime, magnesia, potash, &c., with traces of iron and other metals. All these must be present in the food supplied, otherwise animal existence cannot be supported ; and all are found in the vegetable kingdom, and may be obtained directly therefrom by man in feeding on vegetables alone.^a But the process of obtaining and combining these simple elements into the more complex forms which constitute the bases of animal tissues—definite compounds of nitrogen with carbon, hydrogen, and oxygen—is also accomplished by the lower animals, which are exclusively vegetable feeders. These animals we can consume as food, and thus procure, if we please, ready prepared for our purpose, the materials of flesh, sinew, and bone, for immediate use. We obtain also from the animal milk and the egg, already said to be ‘perfect’ foods ; and they are so because they contain the nitrogenous compounds referred to, fatty matter abundantly, and the various saline or mineral matters requisite. But compounds simpler in form than the preceding, of a non-nitrogenous kind—that is, of carbon, hydrogen, and oxygen only, are necessary as food for the production of animal heat and force. These consist, first, of the fat of animals of various kinds, and of butter ; and from the vegetable kingdom, of the fatty matter which exists in grain and legumes, and largely in the olive and in many seeds : secondly, of the starchy matters, all derived from vegetables, such as a large part of wheaten and other flour, rice, arrowroot, and potatoes, together with sugar, gum, and other minor vegetable products of a similar kind. The fats form the more important group of the two, both in relation to the production of heat and force ; and without a constant supply of fat as food the body would cease to exist. The vegetable eater, pure and simple, can therefore extract from his food all the principles necessary for the growth and support of the body as well as for the production of heat and force, provided that he selects vegetables which contain all the essential elements named. But he must for this purpose consume the best cereals, wheat or oats ; or the legumes, beans, peas, or lentils ; or he must swallow and digest a large weight of vegetable matter of less nutritive value, and therefore containing at least one element in large excess, in order to obtain all the elements he needs. Thus the Irishman requires for his support ten to eleven pounds of potatoes daily, which contain chiefly starch—of which therefore he consumes a superfluous quantity—very

^a “The vegetable kingdom comprehends the cereals, legumes, roots, starches, sugar, herbs, and fruits. Persons who style themselves Vegetarians often consume milk, eggs, butter, and lard, which are choice foods from the animal kingdom. There are other persons, of course, who are strictly vegetable eaters, and such alone have any right to the title of Vegetarians.”

little nitrogen, and scarcely any fat; hence he obtains, when he can, some buttermilk or bacon or a herring to supply the deficiency. The Highlander, living mainly on oatmeal, requires a much smaller weight, since this grain contains not only starch, but much nitrogen and a fair amount of fat, although not quite sufficient for his purpose, which is usually supplied by adding milk or a little bacon to his diet. On the other hand, the man who lives chiefly or largely on flesh and eggs as well as bread, obtains precisely the same principles, but served in a concentrated form, and a weight of about two or three pounds of such food is a full equivalent to the Irishman's ten or eleven pounds of potatoes and extras. The meat-eater's digestion is taxed with a far less quantity of solid, but that very concentration in regard of quality entails on some stomachs an expenditure of force in digestion equal to that required by the vegetable eater to assimilate his much larger portions. And it must be admitted, as a fact beyond question, that some persons are stronger and more healthy who live chiefly or altogether on vegetables, while there are many others for whom a proportion of animal food appears to be desirable, if not necessary. In studying this matter, individual habit must be taken into account. An animal feeder may, by slow degrees, become a vegetarian, without loss of weight or strength, not without feeling some inconvenience in the process; but a sudden change in diet in this direction is for a time almost equivalent to starvation. The digestive organs require a considerable period to accommodate themselves to the performance of work different from that to which they have been long accustomed, and in some constitutions might fail altogether in the attempt. Besides, in matters of diet essentially, many persons have individual peculiarities; and while certain fixed principles exist, such as those already laid down as absolutely cardinal, in the detail of their application to each man's wants, an infinity of stomach-eccentricities is to be reckoned on. The old proverb expresses the fact strongly but truly—"What is one man's meat is another man's poison." Yet nothing is more common—and one rarely leaves a social dinner-table without observing it—than to hear some good-natured person recommending to his neighbour, with a confidence rarely found except in alliance with profound ignorance of the matter in hand, some special form of food, or drink, or system of diet, solely because the adviser happens to have found it useful to himself!"

In Chapters II. and III. the author treats of the materials at man's disposal for food, and gives a very entertaining account of the dietaryes of the different climates of the world from the Tropics to the Arctic Zone. He unhesitatingly condemns the ordinary food of Englishmen as being generally too solid or stimulating; and in Chapter IV. he contrasts the principles on which the

French culinary art is founded with those of English cookery, much to the disadvantage of the latter.

The hints as to the preparation of food, the combination of dishes to form a meal, the scheme of a "rational" dinner-party, and other like topics discussed in subsequent chapters, will not fail to instruct and rejoice many a housewife. The question of wine with dinner, considered in Chapter VIII., will interest equally the physician and the gourmet. Let us hope that the latter will adopt most of Sir Henry's suggestions, and so escape "the 'sick headaches' and 'bilious attacks' which pursue their victim through half a lifetime, to be exchanged for gout or worse at or before the grand climacteric."

We have little to criticise in this book. If we were inclined to be hypercritical, we might say that the *menus* suggested for each month in Chapter IX. seem to be rather expensive, even for housekeepers who are in a position to entertain eight or ten persons at dinner occasionally. At the same time, a study of these *menus* impresses the reader with the irresistible conviction that, despite all the warnings given by him, Sir Henry Thompson is exceedingly fond of a thoroughly good dinner. May he long be spared to enjoy many a "rational" dinner-party like that sketched by himself at page 92 of his entertaining *brochure*. The typography, paper, and printing are faultless. The sheets of the book are held together by the new system of wire-stitching, which does not, in our opinion, possess any advantage over the thread-stitching method, as the thin wire cuts through the leaves and marks them with rust when damp reaches it. The wire also prevents the leaves from opening out fully with that ease and freedom which characterise the thread-stitched book.

Statement of the Income and Expenditure of the Londonderry City and County Infirmary, and other particulars, for 1879. Londonderry: Printed at *The Sentinel* office, Pump-street. 1880. Pp. 15.

FROM Sir William Miller's Surgical Report we learn that, during the year 1879, 863 patients were treated in the hospital, of whom 782 returned home cured or relieved by treatment, 30 died, and 51 remained under treatment on 1st January, 1880.

There were also 395 cases of accident, comprising wounds, contusions, fractures, and minor injuries, the sufferers from which

were attended to and dressed as out-patients, the nature of their ailments not requiring them to be kept in hospital. A large number of serious operations and a number of minor operations were performed during the year with successful results.

The general mortality was rather less than 3½ per cent.

In the City Fever Hospital 44 patients were under treatment during the year, of whom 37 recovered, 5 died, and 2 remained under treatment on 1st January, 1880.

The demand for trained nurses to attend on private cases has been very large, and Sir William Miller has invariably received from patients' friends, and the medical men in attendance, most satisfactory accounts of the knowledge, skill, attention, and kindness displayed by the nurses, showing the careful training they have received from the efficient superintendent, Mrs. Osborne.

Two medical students have been attending the hospital, receiving clinical instruction in medicine and surgery, and practical knowledge in compounding medicine, under the superintendence of the surgeon.

The Cobham Journals. By Miss CAROLINE MOLESWORTH.

With Introduction, Tables, &c., by ELEANOR A. ORMEROD,
F.M.S. London: Edward Stanford. 1880. 8vo. Pp. 178.

PROBABLY no science has in recent years made such rapid strides as that which is aptly spoken of by Miss Ormerod as the "noble science of Meteorology." There are many reasons for this. Among them we may mention the improvement in the instruments employed in modern research, the application of telegraphy to the study of the weather, and the great increase in the number of well-trained observers, who are now daily engaged in noting meteorological phenomena with accuracy and precision. It is, however, to be remembered that from the very nature of the case many years of patient and passive observation were required on which to lay the foundations of the future science; and perhaps we are prone to forget the modest, almost silent labours of those pioneers of meteorology—the old observers whose weather lore and quaint yet shrewd conclusions are but now fast crystallising into science.

This being so, we owe a debt of gratitude to Miss Eleanor Ormerod, the first Lady-Fellow of the British Meteorological Society, for having embodied in the volume before us the salient

points culled from manuscript records kept by Miss Molesworth during a period of more than forty years at Cobham, Surrey.

Caroline Molesworth, youngest daughter of Sir William Molesworth, sixth Baronet, of Pencarrow, Cornwall, and of Caroline Treby Ourry, his wife, was born on November 4, 1794. At the death of Sir William Molesworth on February 22, 1798, his widow quitted Pencarrow to reside in London, and there the chief part of the childhood and youth of Caroline Molesworth was passed, until in 1823, on the death of her relative, General Felix Buckley, she removed with Lady Molesworth to Cobham Lodge, near Esher, in Surrey. Immediately on her arrival here in October, 1823, Miss Molesworth commenced a series of observations on Meteorological and Phenological Phenomena, which she continued with only occasional intervals until failing health and strength compelled her first, about 1858, to entrust the observations partially to other hands, and then gradually to discontinue them, until in 1867 a few scattered entries bring the long chronicle of patient labour to a close. Miss Molesworth died at the age of seventy-eight on December 29, 1872.

The observations, which Miss Ormerod has abstracted and summarised with the greatest skill and patience, extend over a period of twenty-six years, beginning in 1825 and terminating in 1850. The records of the whole series of observations, extending over some forty-four years, from October, 1823, to October, 1867, are contained in five quarto volumes and some unbound papers, in the possession of the Meteorological Society. The plan of the journals was formed by Miss Molesworth from Forster's "Atmospheric Phenomena," Howard's "Climate of London," and Daniell's "Essays." They consist of daily records, arranged in nineteen parallel columns, with their appropriate headings, as follow:—The day of the month; the day of the week; time of sunrise and sunset; moon's age; hour of observation; barometer; thermometer "in the vestibule" (adjacent to the barometer); thermometer "on the post;" thermometers, max. and min., north aspect; mean temperature; thermometers, max. and min., south aspect; modifications of the clouds; general appearance of the weather; direction of the wind; rain; miscellaneous observations; observations relating to animals; observations relating to plants; and Tagliabue's storm-glass, "a scientific toy," as Miss Ormerod calls it. We may here state that the barometrical observations in the journals possess little or no scientific value, and have therefore been very properly

omitted by Miss Ormerod in her tables and summaries. It is equally certain that the chief value of the records consists in the non-instrumental observations on the weather and in the phenological notes. Botany was one of the pursuits to which Miss Molesworth was particularly attached, and her garden at Cobham, which contained many rare plants, was that rather of a naturalist than of a florist. On her decease her collections of dried plants were presented to the Herbarium at the Royal Gardens, Kew.

The village of Cobham is situated three and a half miles S.W. of Esher, in Surrey, near the River Mole; lat. $51^{\circ} 19' 45''$ N., long. $0^{\circ} 24' 50''$ W. The soil is loam, or loam on clay, stated to be about one foot and a half thick, and overlying the London clay. Cobham Lodge stands somewhat apart from the village beyond the church. The altitude of the surface of the ground at 30 feet N. of the house (the situation of the rain-gauge and thermometers from which the observations are given in this volume) is 100 feet above Ordnance Datum (Mean Sea Level).

It may be interesting to quote a specimen or two of the phenological notes included in the journals. We will first take a winter month—December, 1825:—“1st. Trees now leafless. 11th. Rooks busy at one nest. 16th. Violets and Polyanthus in bloom. 20th. Swarm of small gnats by garden gate. 23rd. Chrysanthemums nearly all spoilt. 24th. Christmas rose coming out. 29th. Daphne mezereum fl. 31st. Daisies fl.” Again, we have a spring month—April, 1838—thus annotated:—“1st. First wasp. 5th. Pulmonaria officinalis fl. 8th. Willow fl. 9th. Pear fl. 10th. Plum fl. 14th. Ants throwing up gravel. 15th. Orobus vernus and Borago orientalis fl. 16th. Helleborus viridis fl. 18th. One martin seen; Muscari racemosum fl. 20th. Cardamine pratensis fl. 22nd. Leucocym pulchellum fl. 23rd. Anemone nemorosa fl. 25th. The cuckoo heard.”

At the end of the book a general summary is given of the prevailing weather and its variations from the average in the years 1825–1840, together with the coincident conditions, and variation from average date, of the phenological phenomena observed, chiefly regarding plant-life. The years are divided into quarters in this summary.

Perhaps the most useful portion of the work is that in which Miss Ormerod sums up the results of Miss Molesworth's observations. Space will not permit us to do more than quote these few eminently suggestive words:—“The meteorological conditions of

the last quarter of the year appear to have great influence on the dates of vegetation in the ensuing spring, this influence being often modified according to the depth to which succeeding cold may penetrate the ground, and consequently affect the root action—these effects being shown by the comparison of dates of deep and shallow-rooted plants."—Page 161.

Although Miss Ormerod's book is not directly a medical work, we have not hesitated to notice it in these pages, having regard not only to the growing importance of meteorology as bearing upon the etiology of disease, but also to the pleasure and profit which cannot fail to redound to the busy, overworked physician from a pastime study of the influence of season on the animal and vegetable kingdoms.

J. W. M.

Du Rhumatisme. Nouvelle Théorie, fondée sur la Physiologie, l'Anatomie Pathologique, et l'Observation. Par le DR. VOVARD (de Bordeaux).

On Rheumatism: a New Theory, founded on Physiology, Pathological Anatomy, and Observation. By DR. VOVARD, of Bordeaux.
Paris: Octave Doin, Publisher, 8, Place de l'Odeon. Medium 8vo. Pp. 318.

THE author commences his work by remarking that few maladies have given rise to greater controversy than rheumatism, and that even to-day there is such a "wave of opinions" as to its nature and treatment that it is difficult to say which opinion prevails. Most physicians of middle age, and who follow up the literature of their profession, are painfully alive to this fact, and sometimes begin to doubt whether the old practitioner who recommended "flannel and six weeks" as the only specific was not right after all. For this reason we turned with great interest and expectancy to a new theory based upon such broad foundations as those indicated on the title-page of Dr. Vovard's volume, and the leading features of this theory we shall now briefly notice.

Among the ancient Greeks the words equivalent to catarrh, rheum, and rheumatism, were synonymous, and signified a condition of things in which the dermato-transpiratory processes were arrested by exposure to cold or damp, and in which nature relieved herself by an excess of secretion into some open or closed cavity of the body. Traces of this form of expression are not wanting, and to

the present day an English-speaking sufferer from cold in the head speaks of having "a catarrh;" and a Frenchman, under the same unpleasant circumstances, says—"Je suis enrhumé." These expressions, and the well-known saying of Hippocrates (which he repeats over and over again), "Ubi stimulus ibi fluxus," appear to form the keynotes of the author's doctrine.

The earlier portion of the work is devoted to the consideration of the alternating or compensating action (*basculement*) of various secretions and of the circulation generally—or, as the author calls them, "fluxionary movements"—such as the increase of the urine or the diminution of the dermotic secretion, or the well-known phenomena of coryza, or of intestinal catarrh following a sudden exposure of the external surface of the body to cold; and also to the change in the character of the mucous secretion, which in ordinary coryza is first acrid and gradually becomes bland. A very detailed demonstration of all these facts is given—a proceeding hardly necessary, inasmuch as they are now among the admitted truths of Physiology and Pathology. The author next gives a chapter on catarrhal maladies in general, classing in one large nosological group all diseases arising from exposure to cold and arrest of dermotic secretion—such as rheumatism (acute and chronic), pleurisy, pneumonia, pericarditis, *et alia talia*—and, curiously enough, omits all mention of acute nephritis, which, considered in this light, might be classed as catarrh of the kidney. There is no mistaking the author's views on this point, for at p. 228 he says:—"I will ask, for example, what difference can exist between a case of endocarditis provoked by a stroke of cold, and followed some days afterwards by rheumatic pains, and another attack of endocarditis, also provoked by cold, which is not followed by rheumatic pains? It is beyond dispute that the nature of these two attacks of endocarditis does not differ." In these countries we have always been accustomed to regard acute rheumatism as a disease accompanied by characteristic pyrexia and certain well-known articular phenomena, having a tendency to shift from joint to joint and occasionally to the covering or lining membranes of the heart, or less often to the membranes of the brain, and the author's effort to assimilate acute rheumatism to groups of disease with which it has little in common except its cause, is, we think, to be deprecated. Speaking of the causation of rheumatism the author says (pp. 285–6) that it "results exclusively from the action of cold, which, interfering with the functions of the skin,

determines a serous fluxionary movement," while "gout is generally due to infractions of hygienic rules, such as excess at table, abuse of old" [*gu. saccharine*] "wine, or want of exercise." All this is true, but is it "a new theory"? Speaking of the order of frequency of the joints affected by acute rheumatism, Dr. Vovard expresses his opinion that it does not depend on their greater or less movement, but simply upon the quantity of synovial membrane, either articular or thecal, connected with the different joints—further, that the primary seat of inflammation is the synovial membrane and not the fibrous structures; and, lastly, that the liability to rheumatic attack of the pericardium and the valvular portion of the endocardium is due to the fact of their also being sero-fibrous structures. In support of his views he gives a careful analysis (p. 115) by M. Monneret of 95 cases of acute rheumatism, in which the liability ranged from the spine 0, and the pubic symphysis 1, to the wrists (right and left) 93, and the knees (right and left) 116. This view will receive general assent, but will hardly be accepted as a novelty.

The concluding chapter is devoted to the consideration of the existence of a rheumatic diathesis—a question which the author answers (p. 318) in the negative—managing to fall foul of the late M. Nélaton in one of the side issues connected with this matter. Locke has well explained that many bitter controversies arise from the disputants attaching different meanings to the point in dispute; and so Dr. Vovard is undoubtedly right in asserting that there is not a rheumatic diathesis co-ordinate with that of syphilis, scrofula, or cancer. It is, however, undoubted that there exists in many persons a marked tendency (often hereditary) to rheumatism or gout—tendencies which unfit them for even moderate exposure to cold or wet, or indulgence in convivial pleasures.

Taken as a whole, the treatise is more the work of an accomplished scholar, well versed in the ancient and modern literature of his profession, than of a practical physician. It interests the reader, but adds little to his stock of knowledge or to his power of fulfilling the necessities of everyday practice. It says hardly anything on therapeutics or treatment, subjects so important in rheumatism; and some plans of treatment, now of universal acceptance, are entirely unnoticed. A few cases are given—principally in proof of the author's grand idea of "fluxionary movements"—and two of them are curious. The first is that of a young lady who, from lying in the grass while in a perspiration, got an attack of what we would

call acute cellulitis of the arm, followed by muscular atrophy and loss of use of the limb. Electricity and counter-irritation having failed, the limb was considerably recovered by bathing it in blood of animals freshly killed—a plan of treatment originated by the celebrated Lieutaud. The second is that of a servant girl who had always been subject to excessive perspiration of the feet. On one occasion, while washing the kitchen tiles in her bare feet, the perspiration suddenly ceased—a phenomenon followed by acute meningeal symptoms. These having been relieved, intense headache remained, to cure which every effort was made to restore the perspiration of the feet. This was all in vain, until by means of continuously keeping the feet immersed in hot sand the local diaphoresis returned, and the headache at once ceased.

Lectures on Rest and Pain. By the late JOHN HILTON, F.R.S., F.R.C.S. Third Edition. Edited by W. H. A. JACOBSON, M.B., Oxon.; F.R.C.S. London: George Bell & Sons. Pp. 511.

THE editor well describes this book as one of the surgical classics, and for clear reasoning on well-established facts it is unsurpassed in the English language. The chief charm of these lectures rests in the application of apparently dry and uninteresting anatomical minutiae to the daily practice of surgery, and it is impossible to read the book without being absorbed in the ingenuity of the theories and the penetrating observation which the author displays.

The diagnostic value of so-called symptomatic pains is treated of at length, and the importance of accurately determining the exact cutaneous nerve-filaments engaged is insisted upon, as by careful examination along the trunk from which it springs the cause can frequently be determined. In connexion with this he suggests that pain along the course of the intercostal nerves, as a symptom of abdominal disease, may be explained by the connexions between the splanchnic nerves and the dorsal spinal nerves. Mr. Hilton points out that the law of nervous distribution which is generally attributed to Van der Kolk was first taught by him, and he states it thus:—“The same trunk of nerves whose branches supply the groups of muscles moving a joint furnish also a distribution of nerves to the skin over the insertions of the same muscles, and the interior of the joint receives its nerves from the same source.” The most marked example of this law which he gives is the supply of the sartorius,

gracilis, and semitendinous muscles, all of which have a different nerve-supply, and each of these nerves sends a twig to the knee-joint and also a cutaneous filament to the inside of the knee over the insertions of these muscles.

The author shows also that there is a connexion between the mucous and serous membranes and the muscles which move them. As an example of the former he gives the supply of the larynx by the superior and inferior laryngeal nerves; and of the latter the supply of the pericardium and diaphragm by the phrenic nerve, and the contracted state of the abdominal muscles in acute peritonitis.

The therapeutic influence of rest is abundantly illustrated in this work, and we commend the chapters on the treatment of diseases of the spine and hip-joints to the careful perusal of practical surgeons.

It has been urged that many of Mr. Hilton's theories are fanciful and speculative; but the practical applications of them which abound in this book will amply demonstrate their value, and, in addition, such theories lend a charm and incentive to the acquirement of anatomical facts.

In the present edition are found very admirable footnotes by the editor, Mr. Jacobson, in which all important information on the subjects treated of in the text which has transpired since the last edition in 1876 is to be found, and which adds largely to the value of the work.

In conclusion we may say that it is one of those books the reading of which confers a real pleasure.

Surgical Emergencies. By WILLIAM PAUL SWAIN, F.R.C.S., Surgeon to the Royal Albert Hospital, Devonport. Third Edition. London: J. & A. Churchill. Pp. 220.

IN this little manual is to be found all the necessary information which the general practitioner may require in cases of accident, &c.

The chapters relating to the diagnosis and treatment of fractures and dislocations are clear and concise, and the tables of differential diagnosis of injuries of the shoulder and hip will be found of great practical utility in elucidating these difficult cases.

Antiseptic treatment is clearly described, and a useful chapter is devoted to the emergencies of parturition.

The book is nicely got up, and illustrated by 117 excellent woodcuts.

Report of the Royal Commissioners appointed to inquire into the Sewerage and Drainage of the City of Dublin, &c. Presented to both Houses of Parliament by Command of Her Majesty. Dublin: Alex. Thom & Co. 1880. Folio. Pp. 275.

IN the early summer of 1872 a number of gentlemen belonging to various professions and callings, alarmed at the unhealthy condition of Dublin, as shown by the weekly reports of the Registrar-General for Ireland, met together and after due consideration, founded the Dublin Sanitary Association. This organisation, maintained by voluntary contributions, at once set to work to discover if possible the causes of the high death-rate of Dublin and the most effectual means of controlling it. Years of earnest labour followed, during which the Association repeatedly urged on the Government the necessity of instituting a State inquiry into what might be regarded as a national if not an imperial question—the insanitary condition of the metropolis of Ireland.

For a long time the representations of the Association were apparently unheeded by the authorities, until the outbreak of a terrible epidemic of smallpox in 1878, and an increasing general mortality, brought matters to a crisis. In November of that year a very influential deputation of the Dublin Sanitary Association waited upon Mr. James Lowther, M.P., at that time Chief Secretary to the Lord Lieutenant of Ireland, and earnestly pressed upon him the urgent need for a full and searching inquiry into the death-rate of Dublin. It was not, however, until the autumn of 1879 that a Commission was appointed by Royal Warrant to "inquire into the Sewerage and Drainage of the City of Dublin." This unfortunate limitation of the powers of the Commission well-nigh shipwrecked the inquiry at the very outset. Fortunately the firmness of the Commissioners, Mr. Robert Rawlinson, C.B., and Dr. F. X. MacCabe, Inspector of the Local Government Board for Ireland, averted the catastrophe. These gentlemen determined to take evidence on all matters relating to the sanitary condition of Dublin, and in consequence much valuable information was obtained from the leading physicians and surgeons and from the sanitary experts in the city. All this information is included in the minutes of evidence appended to the Report, and necessarily forms a most important and valuable portion of the large folio volume before us.

On a careful consideration of the evidence laid before them, and

as the result of their personal observation, the Commissioners have come to the following conclusions:—

“That the main sewers of Dublin have been improved, but have not been completed; that new sewers are required; and that the entire system of sewers and drains should be more fully ventilated, and have additional side entrances, manholes, gulleys, and flushing arrangements formed and completed.

“That house-drains are proved to be very defective, and that yards, courts, and back streets are, for the most part, defectively drained, and very dirty in consequence; that privy accommodation is generally defective throughout the poorer quarters of the city, and that it is, for the tenement houses, practically absent; and that, as a consequence, the inhabitants suffer both in health and in morals.

“That the tenement houses of Dublin, according to the medical evidence so voluminously tendered at our inquiry and embodied in this our Report, appear to be the prime source and cause of the excessively high death-rate; that they are not properly classified, registered, and regulated; that they are dilapidated, dirty, ill-ventilated, much over-crowded; and that disease, a craving for stimulants, and its consequences—drunkenness and extreme poverty—are thereby fostered; and that until the condition of these houses shall have been improved, the general health of the city will continue to be injuriously affected.

“That the Corporation have taken action under the Artisans and Labourers’ Dwellings Improvement Act, with the view of effecting tenement-house improvements, and that it is desirable they should further extend their operations in that direction.

“That most of the courts and yards in connexion with tenement houses are unformed and unpaved, and that, as a consequence, there is an accumulation of offensive dirt, general discomfort, loss of health, and loss of power to earn wages.

“That many of the streets are formed with defective material; that public scavenging is inadequately performed; that there is no municipal system of private scavenging; and that, as a consequence, the streets are dirty, and that courts and yards are at all times filthy.

“That, in our opinion, the cleanest and cheapest mode of removing excreta will be by water, through closets, drains, and sewers, to a common outlet. Houses must be drained—streets must be sewered—so as to remove waste water; and if these drains and sewers are well and truly constructed, no additional expenses need be incurred to transmit the entire volume of excreta from the houses and city (if it is suspended in the waste water removed from the city), through the main and intercepting sewers, to some outlet.

"That the collection of the city excreta by means of movable pails, or by processes of (so-called) dry conservancy, will cause more nuisance, and be more costly, than water-carriage—the nuisance will be greater, because there will be retention of the excreta for a time on the premises, and the cost will be greater by the amount of labour necessary to collect the excreta, and also because there is no practical mode of converting the excreta into a portable manure which shall pay the incidental costs and charges.

"That the deposition of sewage in tanks, and its treatment by chemicals, sufficient to produce clarification, cannot be made to pay the costs of the necessary chemical ingredients and working expenses, by producing a manure in a form to be portable.

"That the utilisation of sewage in broad irrigation best realises the value of sewage, if the land necessary for the purpose is near and is available at a reasonable cost or rental, has a favourable soil, and the area is not immediately bounded by inhabited houses.

"That both public and private manure depôts are at present in improper places within the city area, as some of these are situate in courts and yards surrounded by dwelling-houses, and are, consequently, nuisances injurious to the public health.

"That slaughter-houses, cowsheds, and dairies are in improper places within the municipal area, and that some of them possess no adequate appliances for drainage, cleanliness, and ventilation. That we record with satisfaction the fact that the Corporation have secured a suitable site for a public abattoir, and have entered into engagements for its immediate erection.

"That there is no adequate provision of baths and wash-houses specially planned and adapted for the use and benefit of the working classes, and that the inhabitants of the tenement houses, having no other washing and drying accommodation, cannot properly cleanse either themselves or their garments.

"That there is an abundant supply of soft water for all public, private, and domestic purposes, brought into the city from the Vartry works, but that it is not made as fully available for the use of the residents in the tenement houses as is desirable. That a more efficient filtration of the water is required.

"That an abundant supply of water may in some instances be a source of nuisance and injury to health by waste and subsoil saturation, unless there are efficient drains, and that there may be water in excess at public stand-pipes with a water-famine in room-tenements.

"That there are some limekilns in crowded parts of the city which, when in use, generate and diffuse carbonic acid gas, and are then a cause of nuisance and a source of danger to the surrounding inhabitants. That section 108 of the Public Health (Ireland) Act is not duly and fully

enforced in Dublin, with a view to the prevention of nuisances arising from smoke-contamination of the atmosphere.

"That, considering the extent of sanitary improvement necessary in Dublin, we are of opinion that the Superintendent Medical Officer of Health for the city should devote his whole time to the duties of his office.

"That the River Liffey is polluted by the sewage of Dublin so as to be offensive; that, although apparently not directly injurious to the health of the inhabitants, its condition is, in our opinion, prejudicial to the interests of the City and Port of Dublin; that, upon the evidence placed before us, we cannot hold the Liffey accountable for the high rate of mortality which has prevailed, and continues to prevail, within the district which it traverses.

"That, while we regard the improvement of the house drainage of Dublin and of the tenement houses, better scavenging and filth removal, and improved road formation, as matters urgently necessary for the improvement of the public health, we are also of opinion that the River Liffey and the Port and Harbour of Dublin ought to be freed from pollution, and that the sewage of the entire city and of its suburbs ought to be so disposed of as no longer to constitute a nuisance within the River Liffey and the Harbour of Dublin.

"That, having duly weighed the evidence submitted at our inquiry, and examined in detail the plans for main drainage, to see which best fulfils the requirements of City, River, Port, and Harbour purification, we find that Plan No. 1 provides for the interception of the sewage from the entire areas, north and south, and also for the purification of the Port and Harbour from sewage, by the construction of low-level and high-level intercepting sewers, and the discharge of the dry-weather and ordinary flow of sewage during moderate falls of rain, by one main outlet-sewer, continued along and beyond the North Bull wall into deep water, at low tides, where the set of the tidal flow is seawards.

"Plan No. 2 also provides for the purification of the River, the Port and Harbour, but by an extended outlet-sewer eight miles in length, and by a tunnel through the Hill of Howth, which extra length of main sewer and tunnel we do not consider necessary to the purification of the River, Port, and Harbour. Mr. Hassard is well known as an original, bold, and skilful engineer, both in Dublin and in London. To his clear professional foresight the Corporation owes the first conception of the Vartry Water Works, and Rathmines and Pembroke will be indebted to him for their main drainage. His plan for the main drainage of Dublin is both original and bold in its conception, and if in the future there should be a large increase of population along the line of his proposed main outlet, the Hill of Howth may hereafter be perforated as now suggested.

"Plans Nos. 3, 4, and 5, though intended to purify the River Liffey,

do not provide for carrying out the sewage of the Harbour, but propose to discharge it within the limits of the Port, consequently they would not purify the Port and Harbour; and in this most important work these plans would necessarily fail, and in so far as this failure extended, they would be defective. We have, however, the highest opinion of the engineering ability displayed in the production of these plans.

“RECOMMENDATIONS.

“1. After having taken the above-named points into consideration, we have decided to recommend Plan No. 1 to the favourable notice of the Dublin Corporation and of the Port and Docks Board, as both these bodies are mutually and deeply interested in the present and future welfare of the City and Port of Dublin. Plan No. 1 has been prepared by the City Engineer, who is most intimately acquainted with the city, with its sewers, with its drains, and with its water supply. He has also previously prepared main drainage plans, has worked out all the details of the local drainage areas and rainfall, is conversant with the state, character, and action of the existing main sewers, both during dry-weather periods and when in a state of flood, and by having had charge of the main sewers and streets for many years, he has a full knowledge of the subsoil of the city which will have to be opened out and worked in for the construction of the main intercepting sewers; and he has also studied the tidal flow, in and out of the harbour and river, for a number of years, as indicated by elaborate float experiments. In the Main Drainage Scheme of 1871 the sewers were designed to have capacity for the reception and removal of 7,500 cubic feet of sewage per minute. Subsequently Rathmines and Pembroke have been separated, the sewage from these townships being provided for separately. We have learned that the dry-weather flow from the sewers of Dublin, when completed, may amount to 2,000 cubic feet per minute, and we have arranged with the City Engineer to provide for a maximum of 5,000 cubic feet per minute in the intercepting mains, and for 3,500 cubic feet in the outlets. The estimates have been carefully revised, and have been reduced from £350,000—the amount stated by the City Engineer in his evidence—to £252,208 15s. 1d., and with land engines and pumps, and other contingencies, to the sum of £294,170 15s.—or, say, £300,000; and we see no reason to doubt but that the proposed works may be executed for the sum named.

“We further recommend:—

“2. That the sewerage of the city be completed as soon as practicable, so that every street within the municipal area may be provided with a sufficient main sewer.

“3. That the whole of the main sewers be provided with proper ventilators, side entrances, manholes, and flushing arrangements—not fewer

than twenty separate ventilators being provided for on each mile of sewer.

"4. That the entire scavenging of Dublin, both public and domestic, be undertaken and carried out by the Corporation.

"All which we humbly submit to Your Majesty this nineteenth day of June, one thousand eight hundred and eighty."

The Report is signed by the Commissioners, whose names have been already mentioned, as well as by Mr. Robert O'Brien Furlong, Solicitor to the Inland Revenue, who succeeded the lamented Mr. Jerrold Dixon as Secretary to the Royal Commission. We heartily concur with the recommendations of the Commissioners, and trust that means will be taken to give them effect at an early date. One sanitary measure, of paramount importance in our opinion, was not alluded to by any of the witnesses examined before the Commission, and therefore finds no place among the conclusions arrived at. We refer to the compulsory notification and registration of acute infective diseases, without which no system of sanitary organisation can be looked upon as complete.

RECENT WORKS ON DISEASES OF WOMEN.

1. *Clinical Lectures on Diseases Peculiar to Women.* By LOMBE ATTHILL, M.D., Univ. Dubl. Sixth Edition, revised and enlarged. Fannin & Co.

THESE lectures were published in the first instance to supply a much-felt want—namely, a moderate-sized volume, containing such an account of the diseases peculiar to women as would meet the requirements of practitioners and students. How well the little work supplied that want was shown by the rapid sale of the earlier editions; but since then the works on this subject of all sizes and various merits have been multiplied with astonishing rapidity, so that it has now to rely upon its merits for existence. It must be most gratifying to Dr. Atthill to find that not only does it hold its own, but that the demand seems still on the increase—this sixth edition appearing in little over a year after the former one. Though differing but slightly from the latter, it contains some very practical and valuable additions. These, like the rest of the work, have been "verified by personal experience." The book is so well known that further comment would be superfluous. It is, we believe, the best manual in print for the practical teaching of gynaecology.

2. *Notes on Diseases of Women: Specially designed for Students Preparing for Examination.* By J. J. REYNOLDS, M.R.C.S.E.

“THESE notes,” says Mr. Reynolds in a short but remarkable preface, “which are now appearing in the *Students’ Journal* under the title of ‘Aids to Diseases of Women,’ are chiefly compiled from the works of Drs. Barnes, Galabin, and Atthill.”

It would doubtless have been a source of wonder how “all the important and common diseases peculiar to women” could be dealt with in such a limited space, did not Mr. Reynolds give us an “aid” to this subject also. His method is this: Given a subject—gynaecology, and size of book required—eighty-six pages. Take previous authors—Drs. Barnes, Galabin, and Atthill, and cut out as much as you need. Then paste the fragments together, and send to the *Students’ Journal*.

“They contain all the important and common diseases ‘peculiar to women’ which are not to be found in other works.”

Whether the pronoun refers to the “notes” or to the original works from which they are taken, we cannot say, but in either case we should like to know what are “the important and common diseases” which are not to be found in other works.

We cannot recommend the book. Facts wrenched from their context are so crowded together, without sufficient comment or explanation, as in some cases to convey a false impression. It is, therefore, worthless to practitioners, and should be thought worthless by “students preparing for examination,” but we fear this will not prove to be the case.

Facts about Fevers. By DAVID PAGE, M.D., Edin. 2nd Edition.

Edinburgh: MacLachlan and Stewart. 1880. Pp. 16.

LAST March Dr. Page published the first edition of this little pamphlet, and its popularity may be gauged by the fact that a second edition has been called for within six months. It is an admirable paper and cannot fail to do good. Expressed in clear and simple language, so as to be easily understood by anyone of moderate educational attainments, Dr. Page’s “Practical Rules” for preventing the spread of infection commend themselves to all common-sense sanitarians. The author speaks decidedly on many points relating to domestic hygiene and infection, and it is this which imparts a special charm to what he has written.

He maintains that sanitary precautions during infectious sickness,

to be in the highest degree effectual, require—(1.) Separation of the Sick from the Healthy; (2.) Disinfection or destruction of the Fever-poison; (3.) Timely Information to the Officers of the Sanitary Authority of the existence of such sickness.

The following passage indicates the character of the pamphlet:—

"Infectious diseases exhibit widely different degrees of severity, but it is well to bear in mind that the slightest and most incipient degree is as intensely infectious as the most alarming and developed, and that the same unrelaxed precautions are required for the one as for the other. Mildness of attack is only a matter of good fortune to the sick person thus attacked, and gives no security whatsoever to the healthy."

"Do not forget that infection is a quality of the fever poison, and not altogether one of dose or length of exposure. The mildest case and a moment's exposure may give the infection and the disease in its most malignant form, the issue depending upon the state of the individual and his sanitary surroundings at the time, or in other words, *the seeds of infection are always the same, the result depending upon the soil in which they happen to be sown.* I have known some of the worst and most fatal outbreaks of Scarlet Fever to have been preceded in the affected households by the mildest possible attacks."

"Of very many instances of this kind, the following, told by a late eminent physician, Dr. Murchison, may serve as notes of warning:—

"An officer in the Limerick Artillery, aged twenty-two, arrived in London on 2nd September, 1858. On 5th September, in the afternoon, he visited a friend, whose little girl had scarlet fever, but so slightly that she was not confined to bed. He took the girl on his knee and kissed her. On the morning of 8th September he was quite well; but towards evening he was attacked with headache, heaviness, and sore throat, followed by a dusky, scarlet rash, ulcers on the tonsils, constant delirium, sleeplessness, and great prostration. He died on 14th September, at eleven A.M.'

"The second case, with its sad ending, told by Dr. Murchison of himself, is even more instructive, as it shows how very slight indeed, and even unrecognisable by a skilled doctor, the source of infection may be.

"In the afternoon of 14th May, 1863, while from home, I was myself seized with general pains, fever, sore throat, and great prostration. I did not get home until eleven o'clock, and all next day I was very ill in bed with the same symptoms, but there was no rash. Suspecting that I had scarlatina, I sent for a medical friend to advise me as to sending away my only child; but, by the time that he arrived, late in the evening, I was so much better, that he gave a decided opinion that my attack was not scarlatina, and next morning, as I was able to get up and attend to my duties, I believed that he was right, and did not send my child away. I have no doubt now from the sequel, and from what I have seen

in other cases, that my attack was scarlatina. I may add that at the time I was much exposed to the disease, that I never had scarlatina before, nor have I had it since, and that for many months after that attack I was anaemic and out of health. On and after 16th May I saw my child as usual. On the morning of 20th May she was attacked with scarlatina of a malignant form, of which she died on the 27th.'

"It is for this reason that of several persons exposed in seemingly an equal degree to the chance of infection, a few only may catch the disease. It also explains why a person may escape infection on one or many occasions of exposure, and yet catch it in the end.

"Children are the great nursery of infectious disorders of all kinds, but it is a most mistaken notion to look upon these disorders as ailments which children are bound to have. No child is bound to have scarlet fever or diphtheria, not even measles, and to have any one of these diseases points to bad hygienic conditions, and generally to some one's ignorance or neglect."

A number of household rules for the prevention of the spread of infection, and a summary of points to be attended to in house drainage and water supply bring Dr. Page's useful and practical paper to a conclusion.

An Atlas of Human Anatomy. By RICKMAN JOHN GODLEE, M.S., F.R.C.S. Part XII. London : J. & A. Churchill. 1880.

PART XII. of this *Atlas*—a publication which we have noticed on more than one occasion previously—completes the work. It is, as usual, accompanied by an explanatory text, which will, with the parts already published, make up a handy octavo volume of 460 pages. The present fasciculus of the *Atlas* contains four plates, numbered 45, 46, 47, and 48, respectively, in regular sequence of the entire work. Plate 45 illustrates the anatomy of the arm ; the remaining three plates illustrate that of the forearm and hand.

We understand that the *Atlas* may now be had complete as a bound volume—a circumstance which should not be lost sight of by teachers and students of anatomy on the eve of the opening of the winter session in the medical schools.

The manner in which the work has been brought out fully sustains the reputation of the well known publishing firm to which Mr. Godlee entrusted his drawings and manuscript. The first two parts appeared towards the close of the year 1877, so that the author and publishers have kept faith in bringing out the parts with commendable punctuality every three months.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION.

PART III.

MEDICAL MISCELLANY.

—————
Reports, Transactions, and Scientific Intelligence.
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PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF
DUBLIN.

President—E. H. BENNETT, M.D.

Secretary—JOHN WILLIAM MOORE, M.D.

Complete Luxation of the Spine.—MR. THOMSON said: These parts were removed from the body of a boy, aged eight years, who died in the Richmond Hospital on Tuesday last. He was carried in by a man who said he had just been run over by a cart at a distance of 500 or 600 yards from the hospital. He was ashy pale, pulseless, and, to all appearances, dead, but he breathed for about a minute after he was brought in. There was no injury apparent at the time, but, when the body was subsequently stripped, it was observed that there was a great prominence of the last dorsal vertebra, which was, in reality, due to the dislocation forwards of the remaining inferior portion of the spinal column. On opening the abdomen it was found to contain a large amount of blood. The right kidney had been the seat of injury. It was cracked over both surfaces, and from the upper extremity a portion as large as a walnut had been knocked off, and was lying loose in the cavity. Coming to examine the portion of the spine which was evidently the seat of the injury, it was found that a complete dislocation of the lumbar vertebrae had taken place. They had been pressed forward by whatever violence had been applied externally at the seat of the injury. Here there was some bruising and crushing of the spinous process of the last dorsal and of the first lumbar vertebra. As the parts lay in the abdomen, the posterior edge of the body of the first lumbar vertebra corresponded to the anterior edge of the body of the last dorsal vertebra, so that the lumbar vertebrae had been completely dislocated from the last dorsal. The consequence of these injuries was the complete division of the abdominal aorta, and also the complete severance of the spinal cord itself. All the parts round about had been separated by the violence of the injury, and the two portions of the spine are simply held together by a small portion of

one of the spinal muscles. As to the way in which the injury was caused, there may probably be two theories—one is, that the injury was a direct one. The history given at the inquest was that the boy was standing in front of the cart trying to steal some hay, when his foot slipped, and the cart being in motion, the wheel passed over his back. The injury is remarkable for the perfection of it, if I may so speak. Having looked through the records of the Pathological Society of Dublin, and also through those of the Pathological Society of London, I have not found anything approaching so complete a separation of the spinal cord and the abdominal aorta. Clinically, there is little or nothing to say, for the boy did not live more than a minute or two after he was brought to the hospital. But still it is interesting to note that he did live for several minutes after he received so great an injury, which not only destroyed the spinal cord, and thus occasioned a tremendous shock to the whole nervous system, but also opened an immense artery, and discharged its contents into the abdomen.—*February 28, 1880.*

Coxo-femoral Arthritis.—MR. STOKES said : This specimen was taken from a patient who was under my care last October. He was admitted into the Richmond Hospital on the 29th of August, 1879, suffering from all the signs and symptoms of well-marked coxo-femoral arthritis. The history of his case goes so far back as 1846. He was originally a mason ; subsequently he became a shoemaker ; then a cab-driver ; and, lastly, a sexton in one of our parish churches. In the year 1846 he sustained a fall on his hip, from which he suffered a good deal of pain. He was admitted into the Richmond Hospital, where the late Dr. Hutton treated him by the application of leeches, blisters, and iodine. He got better, and left the hospital. The following year he again sustained an injury of the same hip, and all the symptoms he had came on again. He was admitted again into the hospital, and this time was put under a course of mercury. After three months he left the hospital, not suffering any inconvenience save a slight halt. Matters remained in a quiescent state for five years, during which time he was engaged as a mason. In the year 1852 he again sustained an injury of the affected joint, and from this he suffered more or less during a period of four years. He had then to abandon his trade of a mason and adopt the more sedentary occupation of a shoemaker. In 1871 he got so well that he thought he could engage in a more active employment, and took to car-driving—thus, in an unfortunate moment for himself, selecting an occupation which exposed him to a great deal of cold and wet. At the end of 1878 he was thrown from his car, and was brought to hospital, suffering greatly. After remaining seven weeks in hospital, he went away greatly relieved. In April, 1879, he was obliged, without having received any other injury, to give up his occupation and take to his bed,

which he never left until he came to hospital in August following. His condition was then truly pitiable. He was a man of unusually tall stature, being considerably over six feet in height, very strong, well-developed, and muscular. He was suffering acutely from pain in the hip-joint; the limb was considerably everted, and there was a great deal of cedematous swelling above and over the back of the left hip-joint; and the slightest stir gave him intense suffering, while even the vibration caused by the rapid walking of others across the ward gave him acute pain. Any attempt at examination of the seat of disease, except while he was under the influence of anaesthetics, was utterly impossible. He was unable to void the contents of his bladder, and this necessary operation had to be done for him twice a day, and the disturbance which it involved occasioned him very great distress. This, however, was nothing to what he experienced when his bowels were evacuated. There were three sinuses over the external aspect of the joint, two of which passed upwards and inwards towards the acetabulum, and the third went downwards and inwards. On introducing a probe through the two former sinuses, the existence of denuded bone was very apparent, but we could not satisfy ourselves as to the existence of diseased bone on examination of the third sinus, which took an opposite direction. This I believe to have been due to the great length of the sinus, as the probe did not reach to the end of it. From the third sinus there was a continual profuse discharge of thin sanguineous, ichorous, purulent fluid. His pulse averaged from 120 to 180, and his temperature ranged each day between 99° and 102° . He was also afflicted with an enormous bed-sore over the sacrum, and had profuse night sweats, so that his condition was truly pitiable. The question I had to consider was whether an operation could be performed, or he should be left to die, which he would have done very soon, owing to his prostrate condition. Against any attempt at excision were the considerations of his age, and also my conviction that the disease extended very much further down than the line of section that would have to be made in the operation of excision. On the other hand, the removal at the joint was the only operation that could give him any relief, while the fact that the results of that operation have been in this and all other countries so unfavourable was another consideration which made me hesitate long before adopting so extreme a measure. On the 1st of October I amputated the limb at the hip-joint. I adopted Davy's method of arresting haemorrhage, by the introduction of a lever into the rectum, and nothing could have answered better than it did, for I may say without exaggeration that the operation was almost a bloodless one. By the adoption of this measure we got rid of one of the greatest dangers in this formidable operation of amputation of the hip-joint, for I am satisfied that it is the great amount of blood usually lost that plays the most influential part in the unfavourable

results of this operation that surgeons have hitherto had to record. That and the rigid adoption of Lister's antiseptic dressings were, I believe, the two chief reasons that led to the result of the operation being so satisfactory. The specimen is an excellent example of necrosis of the upper end of the femur. I regret that my assistant did not take a larger portion of the bone, for it is evident that the disease extended far below the point where the bone here ends. It may be observed how extremely attenuated and thin the compact tissue of the bone is—in fact, it may be compared to an egg-shell. Two pieces of the head of the bone were found loose in the acetabulum, and have been fixed in their places, as you see, by Dr. Abraham, the Curator of the College of Surgeons. The large cloaca, I found, passed into the upper portion of the medullary canal. In the great trochanter another large cavity is found divided into two chambers by a portion of bone stretching across it. In the acetabulum there were some loose pieces of bone found. It was not in a softened diseased condition, but was completely denuded of cartilage or incrustation. After the operation things went on most favourably, and I succeeded in keeping the wound perfectly aseptic for eight days, which is, I believe, another reason for the success obtained. Of the many true things Professor Lister has said, none are more so than his statement as to the importance of keeping wounds aseptic, if not all through, at all events during the most critical period after the operation. I believe that that circumstance and the bloodlessness of the operation were the two circumstances which aided most largely in bringing about the favourable result. I believe the case is the first in Ireland in which the operation has been performed successfully on an adult. Dr. Richardson performed it successfully in the Adelaide Hospital, but on a very young child; and in the operation he used Davy's lever. There have been three other similar operations performed in this country, but the results were unsatisfactory.—*March 6, 1880.*

Cholera Europaea.—DR. NIXON desired to exhibit the abdominal viscera of a boy, aged fourteen, who was admitted into the Mater Misericordiae Hospital from Artane School, on the evening of the 18th of March last. The history obtained regarding the case was that on the day previous (St. Patrick's Day) he was in his usual health and spirits; ate heartily of roast beef and vegetables for dinner, and went to bed quite well. About twelve o'clock on the following day, the brother in charge noticed him looking pale and sickly; was told by him that he had some looseness of the bowels, and soon afterwards the boy was removed to the infirmary. His condition getting worse, he was sent to hospital some three or four hours after his illness was first taken notice of. When seen in hospital in the afternoon, he appeared stupid and drowsy; answered questions with difficulty and apathy; complained of no pain, but had greatly embar-

rassed respiration. He lay upon his back in bed, with his knees drawn up; and his aspect at the time suggested to Dr. Nixon's resident, Mr. Jennings, the idea of peritonitis. The temperature at this time was 101° F. No note was made of the rate or character of the radial pulse.

During the night vomiting set in with extreme urgency, and was apparently unattended with any distress. The diarrhoea was almost incessant, and perfectly involuntary. The discharges were watery in consistence, of a light yellowish colour, and of a foetid odour.

Dr. Nixon continued: I saw him on the morning of the 19th for the first and only time, and his condition was then as follows:—The boy appeared in a state of extreme collapse. The trunk and extremities were cold; the lips, tip of the nose, and ears icy cold. The face, hands, and feet, presented an aspect of extreme cyanosis. This had a mottled character on the face, being best marked upon its right side and in the right ear. The decubitus was dextral, the legs being slightly flexed. The aspect of the boy was like that of one suffering from intestinal perforation, except that the respiration was more hurried, and the cyanosis extreme. I examined carefully the heart, ascertained that there was no pericardial effusion, and no valvular disease. The pulse was 90, regular, but small and thready. Both lungs were clear in front and behind, and posteriorly the breath-sounds upon auscultation appeared to me to be fairly healthy. There were faintly pronounced bronchitic râles heard, but I was quite satisfied that there was nothing in the cavity of the chest that could account for the patient's condition, as far as the respiratory system was concerned.

The abdomen was somewhat retracted, and on pressure seemed to give rise to pain, as the boy receded from the point of palpation. He appeared to be heavy and drowsy, but answered questions put to him with perfect intelligence; took his food, stimulants, and medicine without the least difficulty, but seemed to desire to be left undisturbed. His linen, at the time I examined him, was stained with the orange-coloured fluid which he had just discharged from his stomach. His tongue was perfectly moist, very cold, clean, save in the centre, where it was faintly coated with a yellowish fur. There was no affection of the throat—no enlargement of the glands. At the canthi of both eyelids a cordy, purulent secretion, small in quantity, was observed. The boy had, however, been suffering for some time from conjunctivitis, which I understand is prevalent in the school. The only other point worthy of notice was the extremely foetid odour exhaled from the patient—an odour so penetrating and disagreeable that I was obliged to open one of the windows in the ward, and remain at it for some time after my examination of the patient. I shall have occasion to advert to this point again. I presume the odour was from the discharges from the bowels and stomach.

It is unnecessary to dwell at any length upon the treatment. Hot jars

were applied to the feet, and hot water cushions were kept to the front and back of the trunk. An ethereal stimulating mixture was ordered, and brandy freely administered. In the course of the day the vomiting and diarrhoea continued almost without cessation; the patient was extremely thirsty, and took drinks freely; the cyanosis continued unchanged; the dyspnoea became more marked, and the patient died quietly, and without a struggle, at ten o'clock in the evening. He was perfectly conscious a short time before death.

The *post mortem* examination was made about sixteen hours after death. The *rigor mortis* was then so marked that it was with considerable force that the arms were put behind the trunk, to enable the section to be made in front. In reference to this point I may remark that I again examined the body on yesterday—two days and a half after death. The *rigor mortis* was still well marked in the lower extremities and the hands and wrists. The former were flexed upon the latter—the proximal phalanges being extended, while the two distal ones were flexed. There was a complete absence of evidences of putrefaction about the body. None of the class who were with me could perceive the least offensive odour, and the skin over the abdomen was free from the greenish tinge of commencing decomposition. The cyanosis was still marked upon the parts mentioned—especially the right ear, which was slatish-black in colour. On the helix we observed a small scab, evidently of old duration. There was no marked shrinking of the features. Cyanosis was still marked, especially at the back of the neck and the lobes of the ears, which presented a well-marked slatish-blue appearance. The blood was not, however, preternaturally thick. There was no trace of effusion in the pericardium. The surface of the heart and the inside of the pericardium had a pasty feel. In the left pleura there were some evidences of pasty exudation, which was evidently of a recent origin, but it did not exist to any very considerable extent. The lowest lobe of the right lung was in a condition of well-marked hepatisation, but I do not think it can be regarded as the hepatisation of pneumonia. I think it is merely an advanced stage of the extreme congestion that is found in the lower lobe of the opposite lung. The upper lobe of the left lung seems to be remarkably dry and anaemic. Beyond what is mentioned the heart presents nothing unusual in appearance. I looked carefully for the presence of haemorrhages on the epicardium, but, with the exception of one little spot behind the aorta, could find none. The œsophagus presented appearances suggestive of catarrhal inflammation. The mucous membrane seems to be considerably roughened. The stomach in its posterior aspect was congested, and presents evidence of haemorrhagic effusion. Starting from the duodenum, and tracing the intestines downwards, they present considerable evidence of disease throughout—there being a number of discoloured patches and a distinct enlargement of the

solitary glands. The same condition continues through the whole tract of the intestines. The portion I have here, belonging to the termination of the ileum, shows the enlargement of the solitary glands in a most unusual degree. The patches of Peyer are very distinct, and, as you go down, the enlargement of the solitary glands is still more marked, especially towards the termination of the ileum. The spleen presents evidence of a considerable extent of perisplenitis, and there were adhesions of it to the surrounding parts of the peritoneum. It is remarkably softened, and the splenic pulp is in the condition which French writers describe as *putrilage*. I exhibit only one kidney here, but it does not show any very unusual appearances. The liver presents a marbled appearance on the surface with which I am not familiar, and a fatty change apparently extends to some extent into the substance of the organ.

The question that naturally arises is—What was the nature of the disease from which the patient died? Was it one of those anomalous cases of typhoid fever described by Louis, in which the disease spends itself altogether on the solitary glands, or was it a case of cholera? I think the history of the case, the extreme amount of cyanosis which existed, the general lesion of the gastro-intestinal tract commencing in the oesophagus, and the plastic exudations found on the pleura and spleen, point to conditions such as are met with in cholera. It is perfectly irrational to regard it as a case of typhoid fever, having regard to its rapidity, the boy having been playing about two days before his death. The vomiting and diarrhoea were of a distinctly choleraic nature, and when I washed out the intestines a large quantity of whitish, flocculent matter flowed into the basin. Lebert, in his article on cholera, dwells on the mottled condition of the liver met with in this disease, though I do not know that he states it is absolutely pathognomonic of it. One condition did not exist, which is usually met with in cases of cholera—namely, a tarry condition of the blood, which, no doubt, in most cases, explains the occurrence of cyanosis. I may, however, mention that Niemeyer, in his pamphlet on “Die symptomatische Behandlung der Cholera,” points out that extreme cyanosis and asphyxia do not depend exclusively upon a thickened condition of the blood, but the paralysing influence of extensive intestinal disease upon the sympathetic nerve.

Dr. Nixon, in conclusion, said that he thought the great interest in the case lay in the pathological appearances found corresponding so closely with those met with in Asiatic cholera. The case seemed to bear out the statement that has been made, that the morbid lesions found in cholera nostras might be perfectly indistinguishable from those of cholera asiatica, the epidemic influence being the only means of assigning each disease to its true class.

DR. J. W. MOORE.—From the clinical history of the case and the pathological appearances, I think we must regard this as a case of scar-

latina. The way in which the disease suddenly set in, with extreme prostration, vomiting, and diarrhoea, is very characteristic of malignant scarlatina; and the appearances observed in connexion with the solitary glands and throughout the intestinal tract are well known to be associated with many cases of scarlatina. The appearances are very typical of psorenterie. The absence of any affection of the throat goes for very little, because just as the eruption does not develop on the skin in the presence of a profoundly prostrating scarlatinal poison, so here the throat affection had not time to develop. He died, as far as I could make out, in a very few hours after the development of the symptoms. It would be interesting to know whether any case of scarlatina occurred at the Artane Industrial School. We know that an epidemic of that disease at present prevails in Dublin.

DR. FINNY.—I think we need not look on it even as a case of scarlatina. It is quite possible to have enteric fever of as short duration as that of this case. As to the condition of the lungs, I think the lower part of the right lung is a good example of the first stage of pneumonia. It is extremely friable, contrasted with the other—so much so that the finger breaks it down. The condition of the spleen is also that found in cases of severe enteric fever. The condition of the intestines is that which is well known in enteric fever—not being confined to the solitary glands, as is the case in cholera and scarlet fever. We know that enteric fever often commences very insidiously; and in a large school like that it is quite possible that the boy may have been ill for a day or two, although he was playing about. It is well known that patients actually in enteric fever have been able to walk about, go through their ordinary avocations, and even seek recreation and change of air in the country. There is a type of enteric fever, or of septicæmia—which is closely allied to it—which has been known to prove fatal in two or three days.

THE PRESIDENT.—My experience of cholera would not at all suggest that the patient died of that disease. The condition of his lungs and blood is quite unlike anything that we were familiar with in the late epidemic of cholera.

DR. NIXON (in reply).—As I have already mentioned, I am quite conscious of having brought the case before the Society in a hurried and imperfect way, but I have given my opinion candidly as to what I consider was the nature of the disease from which the patient died. If the case is to be set down as one of scarlatina, it involves, in my mind, attributing a new history and a new set of symptoms to that disease. Excluding from consideration the case being an isolated one in a school where there are over three hundred boys, you had here neither throat affection, skin affection, nor the high temperature that characterises cases in which rapid death from scarlatina supervenes. I am quite familiar with the conditions exhibited by the intestines in rapidly fatal cases of scarlatina.

I have submitted to this Society some cases of psorenterie occurring in scarlatina and typhoid fever. In these instances the morbid condition was greatly developed in the lower portions of the intestines. I have not seen in cases of scarlatina a lesion invading the whole of the mucous membrane of the gastro-intestinal tract, including the oesophagus. Let me draw the attention of the Society to the symptoms you have to explain in the present case. First, the extremely profuse nature of the discharges from the stomach and intestines. Concurrently with these, you had the asphyxial condition which I described—the extreme breathlessness, which certainly was not accounted for by the condition of the lungs, and that was not explicable on any theory of fever, because, except immediately after his admission, fever did not exist. Another fact to which I attach considerable importance is this: A nurse, who had had charge of cholera patients, on coming into the ward in which the boy was on the morning on which I saw him, said—"What smell is this? We have certainly cholera about us." That nurse had helped to coffin all the patients who died of cholera during the last epidemic. Moreover, the sister who was in charge of the patient also told me that she had remarked the peculiar odour from the patient on the previous day, and had asked herself where was it that she had noticed a similar smell before. On being reminded of the cholera patients, she stated that the smell was that which she had remarked in those cases. Another point worthy of notice is the peculiar mottled condition of the liver. I have never met with it in cases of scarlatina, and, as far as I can judge, it has the same mottled appearances that have been found in cases of a mineral poisoning such as that from phosphorus. I can only say if the case is to be regarded as one of scarlatina, we must remodel our ideas of what that disease is. Sudden deaths from typhoid fever, as in *febris typhoides ambulatoria*, have quite different pathological lesions from those found in the present case. As I have already stated, the interest of the case, in my mind, lies in the occurrence of most of the pathological lesions found in cholera asiatica, in one which, from its history, symptoms, and course, I consider to be an instance of cholera nostras.—*March 20, 1880.*

Dislocation of the Femur forwards on the Pubes.—MR. STOKES said: This specimen is of considerable interest, as I believe it to be the first we have had of late years which exhibits the changes that take place on dislocation of the femur forwards on the pubes. The patient, a young man aged twenty-seven years, a float-driver by occupation, was admitted into the Richmond Hospital on the 30th of last month. He was a muscular, well-made man, and was brought to the hospital on a float by some fellow-workmen, one of whom gave the following account of the accident which had just happened to him:—He was sitting on the front part of a heavily-laden float coming home from the Fairyhouse Races, and the

man to whom the accident happened was sitting on the corresponding shaft on the opposite side of the cart. About three o'clock in the morning the former felt a violent jolt, and immediately afterwards heard a cry. He stopped the car, and found his comrade lying on his face on the road, and the latter told him that he was all right, except his left leg, which pained him. They lifted him up, and, finding that he could not walk, brought him to hospital. The patient, who was not under the influence of liquor at the time, stated the cause of his falling off to be that he fell asleep on the cart. On his admission to hospital I found the middle and ring fingers of the left hand were severely lacerated and fractured. His left femur was dislocated. There was no pain in the hand, but the slightest movement of the hip caused him the most intense agony. When I saw him it was about twelve o'clock, and, finding his left hand middle fingers merely hanging by shreds, amputated them. I then directed my attention to the hip, and found the left lower limb everted and so greatly abducted that it was with some difficulty I made the measurements. This was also enhanced in consequence of the large amount of effusion about the joint. I found great ecchymosis on the inside of the joint and also on front of it. The leg was flexed on the thigh, and there was a certain fulness in the groin over the pubes, but I could not feel the head of the bone. All these circumstances were sources of perplexity in attempting to make a correct diagnosis. There was also a well-marked depression at the normal situation of the great trochanter. On the occasion of the amputation of the fingers the patient took the ether remarkably well, exhibiting no sickness or any other drawback whatever. Having regard to the great abduction of the limb, and the shortening which I was satisfied existed, notwithstanding the difficulty I had in finding the differences of length, and taking into account also the depression over the great trochanter and the fulness at the groin, I formed the opinion that the injury was a form of pubic luxation. While the patient was under the influence of the ether I made an attempt to reduce the dislocation. It was, however, unsuccessful. In the afternoon of the same day I visited the patient about four o'clock, and found him still suffering great pain in the region of the hip, but he had completely recovered from the effects of the ether, and expressed himself greatly relieved from trouble at the hand, in which he had no pain whatever, and seemed inclined to sleep. I left him, having ordered a large poultice over the joint in order to relax the tissues with a view to making another attempt next day to reduce the dislocation. During the night the patient became very delirious, and also vomited frequently, and next morning I found that his pulse had risen to 120 and his temperature to $100\cdot6^{\circ}$, and I also observed a symptom which was not present on the first day—namely, great rapidity of respiration. Having regard to the constitutional symptoms that were present, our attention

was directed to the condition of his lungs, and after an examination made with the assistance of my colleagues, we determined that there was evidence of pneumonia. The question then discussed was whether it would be wise to put the patient again under ether in order to attempt the reduction of the dislocation. After a long deliberation we came to the conclusion that the disease was not sufficiently advanced to contraindicate putting him again under ether. It was obvious that reduction could not succeed unless that was done, and no local application or anything else could be applied to the back of the lung where the physical signs were chiefly manifest, evidenced mainly by dulness over the left side of the chest, as any movement or disturbance caused the patient much suffering. Accordingly, I put him under the influence of ether, and succeeded in reducing the dislocation by manipulation. On first displacing the bone from its abnormal position, I found that it was not in the acetabulum. I changed the displacement, in fact, from being a pubic one into one of the thyroid foramen; then I increased the rotation outwards, and the bone slipped into the acetabulum. So far the operation was very satisfactory. A few minutes, however, after the limb was replaced the patient ceased to breathe, and the various attempts we made to reanimate him proved ineffectual. This was a very disastrous result, and it is not easy to say whether it was due to the ether, to the condition of the lungs, or to the first shock of the injury and subsequent one of the attempt to reduce the luxation. With reference, first, to the left lung, there was clear evidence of commencing pneumonia and distinct haemorrhagic infarction. There was also much congestion of the lung, and a portion of it is perfectly airless. A somewhat similar condition, though not so well marked, is observable in the right lung. There was also commencing phlebitic inflammation of the femoral vein. The portions of the femoral and the iliac veins that I removed have been mialaid. As regards the specimen, we found the bone in its normal situation, and that there was a fracture as well as a displacement. A portion of the horizontal ramus of the pubis is comminuted, and a question might fairly be raised as to whether this fracture was produced by the original injury or by the attempts to reduce the dislocation. The head of the bone was displaced upwards into the pelvis, and that was doubtless the reason why no distinct bony prominence was found in the groin. There was an enormous rent in the capsular ligament over the anterior and inner aspect of the joint. The ilio-femoral ligament is well seen. The case is interesting as showing the position in which we should put the bone in making attempts at reduction in similar cases. It is remarkable that in two of the best handbooks on surgery—those by Mr. Holmes and Mr. Pirrie—it is stated that the rule to adopt in reducing pubic luxations by manipulation is in the first instance to flex the limb on the thigh and the thigh on the pelvis, and then to adduct the limb. The effect of adducting

the limb is to make more tense the ilio-femoral ligament. They say—“Flex the leg on the thigh, and then adduct and rotate inwards.” I think they are in error in this, for having regard to the position of the limb, which is always in a state of abduction, in order to relax the tissues you should increase the abduction. Therefore the rule that I find in most books is and should be to flex the leg, then to increase the abduction, rotate outwards, and then rotate inwards. Any increased adduction must militate against the operation being successful. I think the position of the head of the bone *above* the pubes should make us bear in mind the advisability of making use of the plan that I adopted in this instance, for no method of flexion and abduction could, I think, have proved successful if I had not first lifted the bone up off the horizontal ramus of the pubes. In the second instance where I tried the plan of flexion and abduction and failed, I believe the cause of the failure to have been that I could not lift the head of the bone off the horizontal ramus of the pubes, and that it got locked; but by adopting the simple manœuvre of getting the arm underneath the knee, using the leg as a lever, and lifting up and then abducting the leg, and rotating inwards, a great advantage is gained. We must deplore the result in this instance, but I do not think we can altogether attribute it to the use of the ether. I believe the case to be the first example exhibited to this Society of the appearances presented by a recent dislocation of this kind. The patient told me he had been complaining of what he called a “cold” for some time previous to the excursion to the races, so that the pneumonia that was found after death had probably been in existence for some time previous to the accident.—*April 10, 1880.*

Caries of the Tibia.—MR. WHEELER said: This is a case of carious tibia, with fracture and repair. The patient, a labourer, nineteen years of age, stated that twelve years ago his knee became inflamed, and some months afterwards an abscess formed in the vicinity of the joint, and down his leg. This discharged a large amount of pus for some months; and then pieces of bone came away, most of them small, with pointed edges and slightly roughened surfaces.. Some were large, one being almost four inches long. This went on for twelve months, during which time he was confined to bed, and poultices chiefly were applied to his knee-joint. The knee-joint then became deformed, and assumed pretty much the condition that I shall afterwards show. About three months after that he resumed his occupation. He was then a shepherd's boy, of about eight or nine years of age, and his duty was to mind sheep and cattle on the hills of the county of Mayo. He continued very well, except for the displacement, for about four years, when another abscess appeared about two or three inches down the shaft of the tibia. He still went on with his work. It kept on discharging for three years, only one

piece of bone coming away, not bigger than the first joint of the thumb. About that time, being about seventeen years of age, he was thrown while wrestling, and was unable to rise. As he placed his foot on the ground, it turned outwards, and his knee bent inwards towards the knee of the other leg. The bones of the tibia protruded through the skin, and opened where the abscess originally was, and there was a considerable amount of haemorrhage. He went to the County Infirmary, and the treatment adopted there was also poulticing, no splints being applied to the limb, but it was merely turned on its side, with a pillow under it, and the poultice applied. Pieces of bone came away once a month for five or six months after this period. After being in this state for nine months, he again left his bed, but was unable to walk without crutches. The abscess healed up, and the wound also healed, and skin began to form over where the carious bone was. He came to the City of Dublin Hospital last November, the condition of his limb being then as this cast shows. The two condyles overlap the top of the tibia, and are thrown forward. The tibia was greatly eaten away, but there was no external opening. There were, however, several marks through which, the doctor he was under told me, you could pass a probe from the anterior portion out behind. He had no pain whatever, and there was no reason whatever to believe that carious disease was present in the bone; the only symptom was that he could not lean his full weight on the limb without causing pain. Mere pressure on the limb gave no pain. He had no fever of any kind, and so little did I suspect that disease of the bones then existed to any extent, that the operation I proposed doing was that which was originally proposed by Boin, and advocated by Sir William Fergusson, giving a long flap, and turning it out over the knee-joint. When I made the incision for this, I found that there was extensive disease of the femur, at least three inches above the condyles, and also considerable disease of the head of the tibia. The fracture was what I was looking for with interest. You see the tibia in which we have the disease still existing. I made a section of it, for the purpose of seeing where the fracture was, and you can see the line of the fracture, and the union that has taken place. The tibia was entirely carious, and a probe passed down in front came out behind. We have evidence of disease below the line of the fracture; and it appears as if, the fracture having taken place, we had inflammatory action set up which destroyed the carious condition, and ended with perfect union. We have disease in front of it, and below it; we know the way union takes place in carious bones after fracture has occurred; and we also know the cases mentioned by Sir James Paget, in which carious spine existed, with enormous curvature, but without abscesses, and in which repair must have taken place in the carious bones.—April 24, 1880.

*Report of the Committee of Reference on the Heart and a Clot contained therein, from Mr. Thomson's Case of Membranous Croup.**—The clot which we have removed from the right auricle and ventricle and the pulmonary artery appears to us to have formed *post mortem* for the following reasons:—1. That it is without lamination, of homogeneous consistence, and not friable. 2. That its anterior surface is without red colouring, while the posterior is deeply coloured by red blood, the corpuscles having subsided during the coagulation. 3. That it is free of any adhesion to the walls of the cavities or of the artery. 4. That it exhibits casts of the valves of the pulmonary artery, and of the recesses between the valves and walls of the artery, which are shrunken so as to be smaller than their originals, and of which the posterior is deeply coloured, the anterior blanched. 5. That the clot extends continuously through the two cavities and the artery as far as it has been removed. The heart was not in good preservation for microscopical examination. The Committee, however, consider there were no appearances which could be regarded as indicative of granular degeneration. With the exception of an appearance due to bad preservation, the Committee consider the muscular fibre healthy.

APHONIA SPASTICA.

DR. M. A. FRITSCHE (*Berl. klin. Woch.*, Nos. 15 and 16, 1880), communicates six cases of this affection, first described and named by Schnitzler in 1875. It consists in cramp of the muscular apparatus of the larynx on attempted phonation, an affection analogous to writer's cramp. There is usually total loss of voice. The great effort made by the patient to produce sound is noticeable, but it "sticks in his throat." On laryngoscopic examination the vocal cords are seen to be pressed tightly together, not presenting the usual elliptical opening, but on forcible effort sufficient air escapes through the glottis posterior to the vocal processes to produce an interrupted, convulsive whisper. In the lighter form of the affection there is only a momentary spasmodic closure, limited to the anterior part of the glottis. For treatment electricity, especially the constant current, is of the most value. The prognosis in acute cases is favourable, but in chronic ones less so. Under the title of Functional Spasm of the Larynx, Professor C. Gerhardt (*Archives of Laryngology*, Vol. I., No. 2) relates a case of the same affection, which bears a closer resemblance to writer's cramp from the fact that it came on only when the patient pronounced certain words or syllables. Professor Gerhardt has previously reported the case of a flute-player who suffered from a spasmodic affection of the larynx whenever he produced certain notes.—*Boston Med. and Surg. Jour.*, Aug. 5, 1880.

* See the number of this Journal for September. Page 265.

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Hon. Secretary—WILLIAM WHITLA, M.D.

May, 1880.

PROFESSOR DILL, President, in the Chair.

Notes of Cases of Catarrhal Pneumonic Phthisis. By ALEX. DEMPSEY,
M.D., L.R.C.S.I.

MR. PRESIDENT AND GENTLEMEN,—Before reading the notes of my cases of catarrhal pneumonic phthisis, with your permission, I will briefly preface them with a general description of the disease.

Catarrhal phthisis is described by Dr. C. Theodore Williams as an affection of the lung, which may be clearly traced to catarrh of the bronchi, induced by cold or damp, creeping down into the alveoli, and thus originating catarrhal pneumonia, followed by implication of the alveolar wall. Niemeyer is of opinion that most cases of pulmonary phthisis have this origin, and he believes that those cases in which tubercles afterwards form have been preceded by catarrhal pneumonia and cheesy degeneration; and Virchow doubts whether there ever occurs an eruption of miliary tubercles without previous cheesy deposits in some part of the body. Pathologists are now pretty generally agreed on the catarrhal origin of a great many of the cases of pulmonary consumption, which hitherto would have been looked upon from the first as of tubercular nature.

The following is a general history of the sequence of events:—A patient who is weakened by some previous disease or privation, or who has a hereditary predisposition to phthisis, or who is scrofulous, or has been scrofulous, gets bronchial catarrh, with cough and expectoration, and after a variable time this becomes localised in some part of the lungs, and at the same time extends from the bronchi into the air cells. Crepitus becomes mixed up with bronchial râles, expectoration becomes purulent, rusty, or streaked with blood, dulness is elicited on percussion, and with these signs there is an elevation of temperature, and as the disease progresses the symptoms become exactly similar to those usually described as characteristic of pulmonary consumption.

Single lobules only may at first be affected with this alveolar catarrh,

but if the disease be not arrested, it may gradually invade the air cells of an entire lung.

In mild cases, and under favourable circumstances, the secretion may be expectorated without undergoing any change, or it may be partially expectorated and partially absorbed—fatty metamorphosis taking place in the cell contents, rendering them fluid, and in a state for absorption. But if the cell elements accumulate in the alveoli to such an extent as to exert pressure on the surrounding tissues and blood-vessels, destruction and death of the alveolar walls occur from want of nutrition. Softening and liquefaction of the degenerated products next occur, and a whole mass may be expectorated, leaving a cavity. In this way a lung may become completely riddled with cavities without tubercle taking any part in the process. But the irritation produced by the presence of the alveolar catarrh and the cheesy degeneration it results in, is supposed to have a local influence in the production of tubercle. Niemeyer suggested that this takes place through the lymphatics, and the researches of Drs. Burdon Sanderson and Klein on the minute lymphatic system of the lungs would seem to confirm his views.

Dr. Powell describes a form of tubercle, the result of alveolar catarrh, which differs pathologically from miliary tuberculosis by its primarily attacking one portion of one or both lungs (almost always the apex), and spreading therefrom not by the dissemination of miliary tubercles far beyond the margin of advance, but by a continuous growth involving the destruction and subsequent excavation of the affected lung, and he applies to this affection the name chronic tubercular phthisis.

We should, therefore, look upon all cases of bronchial catarrh with suspicion, especially when it occurs in weakly or scrofulous individuals. By due attention to this catarrh—the “prodromal catarrh” of Niemeyer—we ought to be able to do a great deal in a preventive way to lessen the mortality from phthisis; and even when it has passed on to the advanced stages of the disease, there is still good hope of recovery if there have set in no tubercular complications.

The cases I will now relate were, I believe, of a purely catarrhal nature, and the results of treatment in all was most satisfactory.

CASE I.—Mrs. F., aged twenty-three, fair complexion, gave birth to first baby 29th Dec., 1876. Her convalescence was retarded by a pretty sharp attack of so-called “milk fever.” She nursed her baby, though she suffered severely from fissured nipples. About the middle of February she got a mammary abscess. Whilst attending her for the latter, she complained of a bad cold she had had for some time. I examined her chest, and found it studded over with moist bronchial râles. She was very weak, and had a bad appetite. I opened the abscess, and prescribed quinine and iron.

I next saw her on April 11th, about two months after I had lanced her breast. The cough had never left her; it was getting worse, and there was a great deal of thick expectoration, which some time ago was slightly tinged with blood. She had night sweats, was very weak, and had no appetite; her breathing was short, and she was losing flesh rapidly. There was a hectic flush on her cheeks. Pulse, 118; respirations, 28 in minute. Her father and mother were both living, and there was no family history of consumption. There was percussion dulness under left clavicle, and down to fourth rib, and over this area there was fine crepitation, with scattered subcrepitant râles. The posterior part of the same region revealed the same signs. The base of the lung was healthy; the right lung was also healthy. I painted a blister under the clavicle, and prescribed a mixture of Parrish's and Easton's syrups, and directed her to wean the child at once.

20th.—Pulse, 110; appetite better; signs much the same as on last visit. I ordered her cod-liver oil, and directed the affected area to be painted with iodine.

26th.—Pulse, 98; cough very troublesome, and prevents her sleeping at night; night sweats somewhat diminished. Prescribed a morphia and chlorodyne cough mixture. To take Parrish's syrup alone.

May 3rd.—Pulse, 84; feels stronger; the cough and night sweats very much diminished. The crepitation is now replaced by moist subcrepitant râles, and dulness on percussion is not so marked.

21st.—Pulse, 76; coughs scarcely any; can eat well; percussion note almost as clear as on opposite side. The healthy vesicular murmur is heard all over the apex in ordinary respiration, but on deep breathing some scattered, dry, creaking sounds are heard. Night sweats have entirely ceased. She has gained flesh, and she can walk a good distance without fatigue.

January 19th, 1878.—Nearly two years after attending her, I again examined her chest. There was some hollowing under the clavicle, and the percussion sound was the slightest thing duller than on opposite side. The respiratory sounds were somewhat weaker than in right apex. She has neither cough nor spit, and her general health never was better.

CASE II.—D. D., aged twenty-three, dark complexion, blind almost from infancy, but, notwithstanding, an accomplished musician and musical composer; naturally thin, and of nervous temperament; father and mother died of phthisis.

I saw him on April 26th, 1877. He lived some distance from town. His ordinary medical attendant took ill, and his *locum-tenens* who visited for him pronounced his disease consumption, and gave such an unfavourable prognosis that he was not again asked to visit him—in fact, he said it was useless for him to come to see him. I learned the following

history :—He had had an attack of measles two months before my visit. Immediately after his recovery he got a cold, with cough and slight expectoration ; he paid no attention to it, but by degrees it became worse ; his appetite failed, and he was losing flesh, and he began to have night sweats. Then he took a pain in his right side, and he got shortness of breath. The cough, expectoration, and night sweats increased. I found him very low, and much depressed in spirits. Pulse, 130 ; respirations, 46 in minute ; tongue red and glazed. He was much wasted, and there was a large hectic flush on each cheek. The coughing brings up his food. The expectoration is very abundant and mucopurulent. The right lung was dull on percussion anteriorly and posteriorly from apex to base. Auscultation in front gave, superficially, crepitus and deeply bronchial breathing—behind, bronchial breathing. I put him on iodide of potassium, and applied counter-irritation over the lung.

30th.—Pulse, 128 ; temperature, 102° ; perspiration so profuse that bed-linens and night-dress have to be changed twice daily. Prescribed for perspirations, pulv. Doveri, gr. 5, at night.

May 4th.—Pulse, 124 ; temperature, 102° ; cough very troublesome, and expectoration more profuse. Subcrepitant râles and moist clicking sounds heard over lung. Clicking sounds more numerous over the fourth rib in front, and in this region percussion gives the cracked metal sound indicative of a cavity. I now commenced applying small fly-blisters at intervals on different portions of the lung, and ordered cod-liver oil.

6th.—Feels very weak ; has had a severe attack of diarrhoea for last few days.

11th.—Pulse, 120 ; respirations, 36 ; diarrhoea ceased. *Bruit-de-pot-fêlé* most distinct ; one inch higher, and to the left of right nipple, and over a large area here, there is distinct pectoriloquy and cavernous breathing. I prescribed syr. ferr. phosph. co., and six ounces whisky daily.

14th.—Pulse, 118 ; night sweats appear to be controlled by the Dover's powder ; chest and face to be sponged with tepid vinegar, and liniment of potassium iodide and soap to be rubbed over right lung twice a day.

20th.—Moist râles more scattered posteriorly, and healthy respiration returning ; appetite improving, and night sweats much lessened ; scattered creaking sounds and moist râles in front.

27th.—Does not feel so well to-day. The cavity is filled with secretion. Prescribed a stimulating expectorant, and put him on hypophosphite of lime.

June 8th.—Pulse, 108 ; healthy breathing heard all over posterior part of lung ; dry creaking sounds on deep inspiration. He feels much better, and he is quite lively. .

26th.—The respiratory sounds are now almost normal; at the apex there are some dry creaking sounds on deep inspiration, and cavernous breathing over cavity. Percussion note is becoming as clear as on opposite side. There is considerable contraction of the side, and the head is drawn over to the right, the apex beat being midway between sternum and left nipple. He has been going about in the garden for the last few days, and he is gaining in weight. From this date his improvement continued uninterruptedly, and he was soon able to resume his usual duties. I have seen him several times since, and his health continues to be pretty good. The side is much contracted, and the breathing is weaker than in opposite lung. The cavity appears to be smaller, and higher up in the lung.

CASE III.—W. M. L., aged nine; father and mother living, but the latter suffers occasionally from haemoptysis. I first saw him on Feb. 8rd, 1878. He had a cough during the most of the winter, but, as he showed no other symptoms of ill health, no heed was paid to it. On January 27th—exactly a week before the date of my visit—he got shiverings, headache, and general malaise, and his cough became worse. On the following day he complained of pain under right clavicle, which continued until I saw him, but he was not considered so ill as that he should be confined to the house. Pulse, 108; skin hot; respirations, 24 in minute; tongue coated with white fur. On examining the chest I found dulness over right apex, and crepitant and subcrepitant râles. Throughout both lungs there were bronchial râles (scattered). I prescribed liq. ammon. acet. and vin. antimonialis, and ordered poultices and sinapisms to be applied to the chest.

February 5th.—Pulse, 94; temperature, 99°; pain now gone. The expectoration is looser, and starchy-looking. Dulness on percussion is extending downwards.

7th.—Pulse, 102; temperature, 100·5°; percussion dulness and crepitus spreading down the lung; he now suffers from night sweats. A cracked metal sound is heard at the apex, but this is the only evidence of a cavity. I prescribed hypophosphite of lime, and counter-irritation over the lung.

10th.—Pulse, 108; temperature, 101°; dulness and crepitation have now extended almost to the base. To take cod-liver oil.

16th.—Pulse, 106; temperature, 100·5°; expectoration is now purulent; dulness and crepitation extend over the entire lung. Put him on iodide of potassium.

21st.—Pulse, 100; temperature, 102°; physical signs remain unchanged. Put him on syr. ferr. phosph. co.

March 1st.—The expectoration is now very scanty, and his cough is very much easier. Put him on calcii hypophosph. and calumba.

8th.—The percussion note is clearer from angle of scapula downwards, and crepitus has given place to subcrepitus and moist râles.

18th.—Respiration becoming normal under the scapula, and dulness on percussion disappearing, moist râles are now heard in front, and the cracked metal sound continues at apex. From this date the lung gradually cleared up, and by the end of April—with the exception of weak respiratory sounds and slight percussion dulness—no sign of disease existed in the lung. He gained flesh rapidly, and became much fatter than he had been.

I have examined his chest lately. Percussion over right apex is now more resonant than over left, which I believe is due to emphysematous distension of the weakened air cells.

The cracked metal sound in this case was not due to a cavity. It is elicited in children by percussion over inflated air cells or bronchi, due to bronchial occlusion, with thick tenacious secretion. The chest walls of children are very resilient, and percussion, under the circumstances in question, forces the air out past or through this secretion, and thus causes a sound resembling the cracked metal.

I intended bringing forward some other cases, but as my communication is already too long, I will defer them until a future occasion.

The two first cases are typical examples of catarrhal pneumonic phthisis. The third might be classed as a case of catarrhal pneumonia, but all three had undoubtedly a catarrhal origin. During the progress of a case of catarrhal pneumonic phthisis, and as a result of the inflammation and irritation set up by the diseased products in the air cells, there is an increase of growth of the interlobular fibrous tissue of the lung. In cases that recover, this fibrous tissue contracts the lung, and indirectly the chest wall. The walls of a great many of the air cells in the part of the lung affected are so damaged by the catarrhal inflammation that they become agglutinated together on the removal of their diseased contents, while others not so much injured become distended on the subsidence of the disease. This was the result, I believe, in Case III., because the percussion note was, if anything, more resonant at the apex affected than at the sound one, although the breathing was much weaker. In Cases I. and II., I believe, there was combined with cellular agglutination an increased growth of the interlobular fibrous sheaths, because in both cases, and especially the latter, there was marked contraction of the chest wall, with weak breathing and comparative dulness on percussion. In all there is limited expansion of the affected lung. With reference to treatment, I am inclined to place greatest reliance on a course of iodide of potassium to begin with, and followed afterwards by the phosphates or alkaline hypophosphites, with cod-liver oil internally, and moderate and repeated counter-irritation by

blisters and iodine applications externally. The greatest difficulty one has to contend with in the treatment of these cases is to get patients to persevere and to rigidly adhere to the directions, because once a patient or his friends begin to regard his case as one of consumption, all remedial measures are thrown aside, except the old stereotyped cod-liver oil treatment and change of climate. I would treat all these cases in the early stages as I would any other acute disease, by confinement to bed, or, at all events, to the house.

The Sulpho-carbolates. By DR. WITHERS.

MR. PRESIDENT AND GENTLEMEN,—I am happy in having the liberty of bringing before you some results obtained from the administration of the sulpho-carbolates in several diseases—as smallpox, scarlatina, and acute tonsillitis. I am the more encouraged to do so as this plan of treatment of zymotic disease has not—at least in this country—been much advocated or known; and, also, since any branch of the therapeutics of germ diseases should be carefully thought of, and well tested.

My attention to these preparations was first directed by Dr. Seaton Reid, to whom I owe much valuable information.

The sulpho-carbolates, as therapeutic agents, were first introduced by Sansome and Crookes in 1867, but their valuable properties have not as yet been generally recognised, and the advantages possessed by them over the sulphites and carbolates call upon an investigation into, and a clinical test of, their merits as members of that great division of therapeutics—the antiseptic system. These advantages are as follow:—They are very stable salts, almost tasteless, soluble to any extent, easily absorbed by the blood, and at the same time are also antiseptic.

The sulpho-carbolates are formed usually by the union of oxides or carbonates of metals, or alkaline earths or alkalies, with a compound acid named sulpho-carbolic acid. This acid ($C_6H_5SO_4$) is prepared by mixing atomic weights of pure carbolic acid and pure sulphuric acid; however, it is better to add the sulphuric acid slightly in excess, as the compound acid then obtained forms, with the metallic or alkaline base, crystals of a better form. Heat is evolved, and in a short time a dark syrupy fluid is the consequence. After three or four hours, by slow crystallisation, the pure acid may be obtained in long colourless needles, which are readily deliquescent. The sp. gr. of the acid is 1.288, the odour is less intense than that of carbolic acid, and has an acid reaction; the iron test is also more readily manifest than in the carbolic acid alone. It is soluble in water, alcohol, and ether to any extent.

Perhaps it may be well to state the mode of preparation of the salts which I have the honour to place before you.

1st. The zinc sulpho-carbolate— $Zn(C_6H_5SO_4)$.

By taking pure sulpho-carbolic acid, and adding oxide of zinc, or pure

metallic zinc, until the acid is thoroughly saturated, hydrogen is given off during the process, and by slow evaporation we obtain crystals, in the form of brilliant, colourless, rectangular plates, which are very soluble.

2nd. Iron sulpho-carbolate— $\text{Fe}(\text{C}_6\text{H}_5)\text{SO}_4$ —is prepared by acting on the pure iron with sulpho-carbolic acid to neutralisation, and then crystallising. The crystals obtained are in the form of plates of a light green colour, and readily soluble in water.

3rd. Sodium sulpho-carbolate— $\text{Na}(\text{C}_6\text{H}_5)\text{SO}_4$.—It is the best known of the series, and is obtained by neutralisation of the acid with carbonate of soda, then evaporating carefully over a water bath. The crystals are brilliant rhombic prisms, soluble in two-thirds their weight of water, slightly soluble in alcohol, but not in ether. The pure salt is tasteless.

The sulpho-carbolates should all yield clear solutions, and have a definite crystalline form. There should not be the least odour of carbolic acid, but on heating carbolic acid is given off. They are also very stable compounds.

In endeavouring to advocate the further and more extensive use of these agents in general practice, I have a few introductory remarks to make before I proceed to state what clinical experience has revealed. You will agree with me that each zymotic disease is the result of a specific poison, which is stated to be in the form of a germ; the action of this poison I believe to be more fermentative than catalytic, so that believers in the germ theory of disease are more clearly recognising the fact that a new era has arisen in the science of therapeutic medicine—that is, if the germ theory be correct, then there can be laid down the principle that antiseptics and antiferments will be valuable in the treatment of zymotic disease. To enter into an explanation and defence of the germ theory would be outside the limits of this paper, but I shall merely say that I believe that most of the cases of contagious diseases arise by means of a previous germ—so that if, when this is introduced into the system, it be acted on by a soluble antiseptic, then I am convinced the zymotic poison will be modified in its effects, and its duration shortened. To obtain a suitable agent, having the above quality, has long been a desideratum; in carbolic acid, however, I think we find what is required, but the difficulty with it is to administer it internally without some unpleasant effects, so that the tissues which have been impregnated with the zymotic poison may absorb the antiseptic. This objection is got over in the combination sulpho-carbolate, which, however, is not a direct antiseptic itself, yet, when it is absorbed, the carbolic acid of the salts is thoroughly projected through the system, and a sulphate excreted by the kidneys and intestine. The sodium salt is the most powerful in arresting saccharine fermentation, and as it is very soluble and tasteless, it has been the most extensively used. I have seen no ill effects from its administration, in scruple doses, every four hours. After being taken for a short time, the

odour of carbolic acid can be detected in the breath. I have also noticed a slight looseness of the evacuations occasionally, which I would attribute to the sulphate of sodium after the carbolic acid has been set free.

For some time past scarlatina, smallpox, and acute tonsillitis (which, indeed, in many cases might be classed as the result of a zymotic poison) have been treated in the Union Fever Hospital with the sulpho-carbolate of sodium. Statistics, I am aware, are often not reliable, but as the action of this salt has been so remarkable, I will take the liberty of placing before you some statistical details.

Cases of scarlatina on admission receive a tepid bath, and the treatment adopted is the sulpho-carbolate of soda in solution. No other remedy is prescribed except in cases of haemorrhage. The diet is milk. The dose of the sulpho-carbolate is 10 grs. every two hours; 5 grs. for children. Since its introduction into the Fever Hospital, 31 cases of scarlatina have been admitted. Of course these were not all of a malignant type, more than one-half being of the simple form of scarlatina, which is said by some to get well without any treatment; however, during the progress of the fever, advantages in the above treatment have been noticed which will place this medicinal agent far in preference to others. Of these 31 cases there were 3 deaths, which will make a mortality of 9·7 per cent. This I think is a low death-rate, when we consider that about one-quarter of the cases were of an anginous or malignant character. The results of this special treatment in these 31 cases have been almost unvaried. The absorption of the sulpho-carbolate of soda into the system is noticed at about the end of twenty-four hours, by the evidence of an almost complete cessation of throat symptoms. The tonsils are of a dirty white colour, as if touched with a mild caustic, and their enlargement is observed to diminish quickly. The temperature and general fever lessen, and the patient proceeds rapidly to convalescence. Since the commencement of this treatment in no case have I noticed any dropsy, and in the majority there was very slight, if any, desquamation. I have, therefore, every confidence in the substitution of the sulpho-carbolate as an antiseptic antipyretic in the place of the former dia-phoretic and expectant treatment of scarlatina. It has been most satisfactory, the recovery of the patients being rapid and complete, and the mortality rate being very low.

The next disease on which we have tried the influence of sulpho-carbolate of soda was smallpox. We were unfortunate during the epidemic of 1878 in not having this preparation in our possession, as then statistics of 156 cases might have been prepared which would have shown more perfectly the reliance that can be placed in it; but, however, in a few cases towards the latter part of the epidemic, and in some recent cases, it has been administered with marked success. These cases were 25 in number, and of them we had 2 deaths, one a young man in

whom the disease was confluent and haemorrhagic, and the other a child of four months old, ill with marasmus, and who received the variolous poison from its wet nurse. You will see we have thus a death-rate of 8 per cent. These cases are taken successively, without any selection, and when we take the last 25 cases of the epidemic of 1878, when it might be expected that the type of the disease would be less severe, it is found that the death-rate was 16 per cent. The rate of mortality for the 156 cases admitted into hospital in 1878 was 19·87 per cent.; whilst that for the whole borough was 26 per cent. Now if we pursue the argument that mortality rates are decisive as to treatment, there can be no doubt as to the proper value of the sulpho-carbolate, but they are often delusive. The internal treatment is similar to that of scarlatina, but occasionally an alcoholic stimulant or a sedative is required. It has been found that when the patient is seen early, and treatment at once commenced, then the primary fever is lessened, the throat symptoms which are so troublesome to a smallpox patient, when the soft palate and fauces are covered with pustules, disappear rapidly—often in twelve hours—and, what is more remarkable, in none of the cases so treated has any secondary fever been observed. I cannot say that the internal administration of the sulpho-carbolate has any effects on the scars of the pustules, and we have not tried the external application of carbolic acid to the pustules, as has been done in Dublin. The effects of this treatment have been so uniformly successful as to warrant me in adding my testimony in favour of its employment in smallpox.

In acute tonsillitis the administration of sulpho-carbolate of sodium was eminently favourable, the hypertrophy of the tonsils rapidly subsided, rarely is there any suppuration, and power of swallowing is restored in from three to four days. It is in this affection that I think the iron salt will prove most useful, as I have noticed cases where the patient was much prostrated—in fact, in a typhoid condition; and I believe that the administration of the iron preparation will be more satisfactory than the sodium salt, although the latter is very beneficial when combined with quinine.

As for the employment of the sulpho-carbolates in other contagious diseases I have had no experience, but I believe that Ligertwood has administered them in typhoid fever and phthisis with very varying success.

Passing on from the practical to the suggestive, I would ask the attention of the Society to another of these salts—viz., the sulpho-carbolate of calcium. In the treatment of rickets, it has been difficult to find a reliable soluble lime salt. Those generally within our reach are not so, and contain but small quantities of lime, whereas we have in this a salt which is easily soluble in its own weight of water, and containing ninety grains of calcium in the ounce of the sulpho-carbolate. Hence, by this

means, we are enabled to introduce lime into the system to any extent, so that I would suggest that this agent should be employed in those diseases of the bones which are marked by a deficiency in the lime salts; for the usual salts employed are deficient in solubility, and allow but of the absorption of the lime in too feeble proportions to be of any practical value.

As for the zinc sulpho-carbolate, I have not seen it employed sufficiently as to warrant any certain conclusion. But Professor Wood recommends its use for ulcers and wounds, in solutions of 5 to 10 grs. to the ounce of water, inasmuch as the fluids of the wound slowly decompose the salt, and set free the carbolic acid, which, acting as a germ destroyer on the surface of the wound, and in the surrounding atmosphere, rids them of all putrefactive particles, whilst at the same time the metallic salt is exerting its own inherent antiseptic and astringent qualities.

In conclusion, gentlemen, whilst we try to avoid, on every hand, by a cautious and prudent abstinence, all extremes, we must have a constant regard for the results of actual experience. These extremes, on the one side, might be a violent advocacy of the germ theory of disease and the attendant therapeutics; or, on the other, quite as violent and total denunciation; yet, whether our position be one or other of these matters little in the consideration of the advantages which arise from the administration of the sulpho-carbolates. In no sense can we be accused of undue influence when there is but a simply-stated clinical experience. This experience, no doubt, limited so far, will extend and approve of the use of these agents.

Experience keeps hand in hand with theory. The underbasement of the discovery of these preparations was the antiseptic theory, and still keeping in view a knowledge of this, have their qualities been advocated. Any theory which might be advanced to explain their action might, perhaps, be set aside by the exponents of the pro or con, but I venture to submit that it is to the ready solubility of the salts and to the antiseptic character of the carbolic acid that we must attribute their undoubted value.

Why these salts seem to act principally on the throat would not be easy to say; but I would suggest, that it is because our attention in the above diseases is directed mainly to the throat, and, hence, here we look for the first improvement, and the patient first expresses his relief in having the throat symptoms subdued. I believe that the medicinal agent induces a total reaction throughout the entire absorbent system, but that owing to the inflammatory action taking so acute a form in the region of the tonsils, it is here we experience the earliest benefit.

The therapeutical action of the sulpho-carbolates I would thus summarise:—The soda salt, so far, has proved a powerful agent in curtailing the natural course of the disease, in subduing the pyrexial

condition accompanying zymotic affections, and, lastly, there is an obvious and distinct alleviating influence on the throat symptoms. The iron salt, not yet so much in use, has been beneficial as a tonic antiseptic. Whether its action in those cases of phthisis where there is abundant foetid expectoration will be advantageous, is a point to be determined in the light of future experience.

The zinc and calcium sulpho-carbolates, are still, I may say, in their infancy as surgical remedies, but will, I am sure, be taken up, and fulfil the expectations of those who have brought them forward as therapeutical agents.

Gentlemen, I have no doubt of the usefulness of the sulpho-carbolates, but you will please understand me, that I do not consider them to be infallible in the treatment of zymotic disease. Everyone has met with rapid and deadly cases of infection, where every form of treatment was hopeless. My idea in preparing this paper was to add a little of evidence to the growing opinion that the treatment of zymotic diseases must, in the future, be such as to deal with the fever itself, and not with symptoms—or, in other words, expectant treatment must be consigned to oblivion.

DIAGNOSIS OF VAGINITIS AND METRITIS BY MICROSCOPIC EXAMINATION OF URINE.

DR. C. HEITZMANN recently called the attention of the New York Pathological Society to the differential diagnosis between urine of the male and the female. In the latter he stated that, by the microscope, almost always vaginal epithelia were seen, except in urine of virginal persons. The presence of pus-corpuscles, with a larger amount of epithelia of the vagina, in both the upper flat and the deeper cuboidal—which latter often exhibit endogenous formation of pus-corpuscles—admitted of the diagnosis of vaginitis. Larger caudate and sharply-angular epithelia were present on the vaginal portion of the uterus; if such epithelia were present in the urine, together with pus-corpuscles, the diagnosis of cervicitis could be made. Columnar, ciliated epithelia, either *in toto* or broken apart into smaller elongated pieces, some of which also may be ciliated, appeared in the urine whenever metritis was present. Pus-corpuscles discharged from the uterus were often ciliated. Care should be taken to guard against errors due to the presence of thin pseudopodia or of attached bacteria. Such ciliated pus-corpuscles were quite characteristic in the urine in cases of metritis. The presence of connective-tissue shreds always indicated ulceration, and, together with the occurrences as mentioned above, allowed of a determination of the seat of the ulceration.—*N. Y. Medical Record*, July 31, 1880.

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
September 11, 1880.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOtic DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea	
Dublin,	314,666	776	879	6	22	43	1	26	20	122	36·3
Belfast,	182,062	533	406	—	5	1	3	16	14	71	29·0
Cork,	91,965	192	162	—	—	5	1	8	7	9	22·9
Limerick,	44,209	95	73	—	—	2	—	2	2	6	21·5
Derry,	30,884	63	51	—	—	—	—	2	—	1	21·5
Waterford,	30,626	58	85	—	—	3	—	—	1	32	36·1
Galway,	19,692	35	32	—	1	—	—	—	—	—	21·1
Sligo,	17,285	37	16	—	—	—	—	—	—	2	12·0

Remarks.

The mortality was extremely high in Dublin and Waterford, very high in Belfast, moderate in the other towns except Sligo, in which it was very low. The death-rate represented by the registered deaths was 28·9 per 1,000 of the population annually in the sixteen principal town districts of Ireland, 24·9 in twenty large English towns (including London, in which the rate was 20·8 per 1,000), 18·7 in Edinburgh, and 18·8 in Glasgow. When the deaths of persons admitted into public institutions from localities outside the district are omitted, the rate of mortality in the Dublin registration district proves to have been 35·8 per 1,000, while that within the municipal boundary, similarly corrected, was 39·0 per 1,000. Zymotic affections killed no fewer than 281 individuals in Dublin, compared with a ten-years' average of 140·2 deaths—that is to say, this class of diseases was exactly double as fatal as in previous years. Scarletina, whooping-cough, and measles were all destructive to life, but diarrhoea was particularly fatal, with 122 deaths, of which as many as 105 occurred among children under five years of age. This

"slaughter of the innocents" extended to Belfast and Waterford also. In the latter town a severe epidemic of "choleraic diarrhoea" and dysentery was reported by the Registrar of No. 1 district. The only favourable feature in the Dublin returns of zymotic diseases is the diminishing prevalence and fatality of smallpox. Only 6 deaths were registered, 5 of them in the first week of the period. The week ending Saturday, August 28, was the first since that ended Saturday, February 2, 1878, in which there was not a death from smallpox registered in the Dublin district. Of the 20 deaths returned as due to fever, 11 were ascribed to typhus, 5 to enteric, and 4 to "simple continued" fever. Diseases of the organs of respiration caused 89 deaths, including 65 from bronchitis and 18 from pneumonia. The average in the corresponding four weeks of the previous ten years was 59·3, including 39·3 from bronchitis and 11·4 from pneumonia. On Saturday, September 11, the numbers of cases of the chief zymotic diseases under treatment in the principal Dublin hospitals were the following—smallpox, 21; measles, 24; scarlatina, 48; typhus, 47; enteric, 36; and pneumonia, 10.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of August, 1880.

Mean Height of Barometer,	-	-	-	30·047 inches.
Maximal Height of Barometer (on 11th at 9 a.m.),	-	-	-	30·316 ,,
Minimal Height of Barometer (on 7th at 11 a.m.),	-	-	-	29·368 ,,
Mean Dry-bulb Temperature,	-	-	-	61·0°
Mean Wet-bulb Temperature,	-	-	-	58·6°
Mean Dew-point Temperature,	-	-	-	56·6°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	-	-	·459 inch.
Mean Humidity,	-	-	-	86·0 per cent.
Highest Temperature in Shade (on 10th),	-	-	-	73·4°
Lowest Temperature in Shade (on 20th),	-	-	-	49·0°
Lowest Temperature on Grass (Radiation) (on 1st),	-	-	-	44·8°
Mean Amount of Cloud,	-	-	-	58·6 per cent.
Rainfall (on 10 days),	-	-	-	1·401 inches.
General Directions of Wind,	-	-	-	E. & N.E.

Remarks.

Although broken weather prevailed during the first week, this month eventually proved remarkably fine and summerlike. Until the 9th westerly (S.W. to N.W.) winds were prevalent and showers fell frequently. On the 7th a deep atmospheric depression passed over the South of Ireland in an easterly direction. It reached Holland on the morning of the 8th, when it changed its course and travelled northwards,

becoming dispersed over Scandinavia on the night of the 9th. This disturbance caused very heavy rains in many places, but no sooner had it passed than the barometer rose with great rapidity, atmospherical pressure became very uniformly distributed over Western Europe, and a prolonged period of dry, warm, summerlike weather set in, accompanied by moderate easterly (N.E. to S.E.) winds or calms. In Dublin the fair weather was heralded by a beautiful sunset on the 8th, and two days afterwards the thermometer in the shade rose above 70° in the city for the first time during the present season. Brilliant displays of aurora borealis were seen on the nights of the 12th and 13th at many of the northern and western British stations. The anticyclone, or area of high atmospherical pressure, lay over Scotland almost until the end of the month, while several "thunderstorm depressions," skirting its southern border, crossed France in a north-easterly direction. On the 21st in particular violent thunderstorms raged over France, and were accompanied in some places with torrents of rain. Thus at Lorient 8·66 inches fell on this day. It is noteworthy, also, that thunderstorms were of frequent occurrence in the south-west of Ireland during the summerlike weather of the middle and close of the month. In Dublin there were no electrical disturbances. A solar halo was seen at 7 a.m. of the 31st, and the atmosphere was more or less foggy on the 10th, 20th, 27th, and 28th. The mean temperature of the month was 4° higher than that of August, 1879, and 1·6° above the average of the previous 14 years. Of the total rainfall more than two-thirds (1·064 inches) fell in the first week. After the 8th rain was registered on only three days.

CHLORAL HYDRATE IN ACUTE GASTRO-ENTERITIS OF CHILDREN.

PROF. KJELLBERG asserts that there is no medicine equal to chloral for checking the vomiting in the acute gastro-enteritis of children. Being rapidly absorbed, it calms the patient, stops the vomiting, and often checks the diarrhoea. It is best given by enema, so as not to risk its rejection by the irritable stomach, and it should be given soon after a passage. The dose for a child of from five to six months is from 3½ to 4½ grains, while to a child of from twelve to fifteen months, from 7½ to 9 grains may be given. The bulk of the injection should not exceed a dessertspoonful. The enema may be repeated two or three times daily, and the dose may be increased if it is found necessary. To increase the effect of the chloral, Prof. Kjellberg generally adds to each enema a drop of tinct. opii, and, if stimulants be indicated, five to fifteen drops of liq. Hoffman. At the same time the other ordinary remedies are not neglected.—*The American Practitioner*, June, 1880.

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Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

THE ANTISEPTIC TREATMENT OF ENTERIC FEVER.

DR. ROTHE (*Deutsche med. Woch.*, 11 and 12, 1880) ascribes an intense "antipyretic" action to the combination of iodine and carbolic acid. A comparison of nineteen cases of enteric fever treated by this combination shows that in all alike first the pulse, and then the temperature sank, within from two to seven days—the pulse frequently below the normal, without ever rising to its former height except when the medicine was discontinued, or given less frequently by way of experiment. The tongue assumed in none of the observed cases that dry, brown, hard, and crusty surface, which is usually a constant symptom in severe cases, and the gastric symptoms subsided at the latest in the beginning of the second week, being followed by moderate appetite, and a feeling of comfort. Rothe draws attention especially to this condition, in order to ascertain, by further experiments, whether this is also an invariable result of the combinations of carbolic acid and iodine. The effect on the fever seems to take place, sooner or later, between two and ten days, according to the intensity of the infection (general symptoms). Quinine was not given in any case. How can this "antipyretic" effect be explained, if it be true? Does a direct influence on the vascular activity take place, as with the digitalis, through stimulation of the vagus or of the cardiac ganglia? or is the cessation of the fever a secondary result, its cause being gradually removed or overcome? Dr. Rothe thinks that both explanations are valid. The febrile action in enteric fever is undoubtedly in direct proportion to the morbid process in the small intestine, the seat of the local, and the source of the general infection. With this centre of infection, the iodine and carbolic acid, being hourly introduced, comes into more or less direct contact, especially after previous evacuation of the intestine; and then the question arises as to a direct development of the antiseptic—the bacterium-destroying—quality of this remedy. The medicine itself is readily taken by the patients, both children and adults, and indeed for weeks, which cannot be said either of quinine or of salicylate of soda. Oil of peppermint completely disguises the disagreeable smell; and gastric or sensorial disturbances, which sometimes attend the use of the above-mentioned remedies, were never observed. The medicine has also the recommendation of cheapness—a very important circumstance in view of the present high price of quinine. It seems important that the

remedy should be given in sufficient quantities (1 to 2 of carbolic acid, and 1 of tincture of iodine, in 120 of water), a tablespoonful being given hourly, until a decided effect on the pulse and temperature is produced, and then every two hours, until apyrexia follows; and it should be continued for three or four weeks. Whether the carbolic acid, without iodine, has the same effect, Dr. Rothe does not know. For the last ten years he has used the combination of carbolic acid with iodine in phthisis, diphtheria, diarrhoea, &c., and has never ventured to give up its use.—*London Med. Record*, Aug. 15, 1880.

SALICYLATE OF SODA IN THE TREATMENT OF IRRITIS.

IN a paper in *Knapp's Archives*, June, 1880, Dr. Chisholm, of Baltimore, records one of a series of cases which have come under his notice which demonstrates the value of salicylate of soda in the treatment of acute scleral and iritic inflammations. In this particular case the patient was a woman aged fifty, who had already on two occasions undergone the operation of iridectomy in both eyes for acute glaucoma, with a successful result. Subsequently, however, one eye became the subject of a very acute attack of iritis. Pus appeared in the anterior chamber, vision was reduced to the counting of fingers, and the vitreous humour was so turbid that an ophthalmoscopic examination could not be made. Salicylate of soda was given in twenty-five grain doses at intervals of two and a-half hours. It was administered in this quantity during the night, and at the end of twenty-four hours the appearance of the eye was markedly improved. Considerable constitutional disturbance was caused by the drug; nevertheless, its use was insisted on for another day and night, after which it was discontinued. The patient finally regained perfect use of her eye, reading with suitable glasses, Jaeger, No. 1. To secure all the benefits of this method of treatment, it is necessary that the salicylate of soda be given in doses of from 20 to 30 grains every three hours—that is, from 150 to 200 grains in the course of the first day. The constitutional disturbance caused by such large doses is considerable, and may show itself by temporary deafness, tinnitus aurium, and even hallucinations. If decided benefit be not obtained in forty-eight to seventy-two hours the salt is not likely to prove useful in the given case, and the stomach and head disturbances will generally necessitate a change of treatment.—*London Med. Record*, Aug. 15, 1880.

PICROTOXIN IN THE TREATMENT OF EPILEPSY.

M. HAMBURSIN, of Namur, has a valuable paper on the treatment of epilepsy in the *Bull. de l'Acad. Roy. de Méd. de Belgique*, No. 2, 1880. Having spoken of the general principles to be followed, and of the use of bromide of potassium (of which he has not a very high opinion), he proceeds to state that another indication for treatment is to prevent the

vascular spasm which causes the encephalic anaemia of the initial stage of the attack. For this purpose the galvanic current has been employed with the view of acting directly on the cervical sympathetic. Some success has followed its use, but as a rule it has proved unsuccessful, probably because of the transient nature of its action on the nerves. The same effect has been sought for with the aid of drugs that act on the vasomotor nerves, such as valerian, belladonna, carare, and coccus indicus. Of all these, M. Hambursin has found the last the most efficacious, but he has found it necessary to give it in much larger doses than are recommended by M. Planat, who first employed it in the treatment of epilepsy. He employs the tincture, and begins with a dose of ten drops morning and evening, increasing by two drops daily until he has reached the dose of sixty drops; then he increases by ten drops a month, until the dose is a hundred drops. If the attacks have ceased by this time, he continues with this dose; if not, he does not hesitate to increase the dose to a hundred and fifty drops, and would not hesitate to give still larger doses, if necessary. The use of the remedy should not be interrupted, for fear of impairing its effects. The coccus indicus produces symptoms of cerebral congestion; hence it is proper to conclude that, when administered in the above manner, it keeps the cephalic vessels in a state of permanent relaxation, and thus prevents the vascular spasm which produces the sudden anaemia of the brain, the fundamental condition of the initial stage of the epileptic attack. M. Hambursin concludes his paper with reports of six cases of long-standing and severe epilepsy, all of which had been treated without success with large doses of bromide of potassium, and in all of which the attacks have ceased entirely under the coccus indicus treatment.—*N. Y. Med. Record*, Aug. 21, 1880.

RAPID BREATHING AS A MEANS OF PRODUCING ANALGESIA.

IN 1875 Dr. W. G. A. Bonwill, a dentist of Philadelphia, discovered that by causing his patients to breathe rapidly for a few minutes, the sense of pain was often so obtunded that he could extract teeth without causing any discomfort. The matter was, soon after this, taken up by Dr. Addinell Hewson, who made a favourable report of his experience with the method, at the International Medical Congress in 1876. Not much interest was excited, however, and the subject was virtually dropped. At a recent meeting of the Philadelphia County Medical Society, papers upon rapid breathing, as a means of inducing analgesia, were read by Dr. Benjamin Lee and by Dr. Bonwill. In some cases it is necessary, when rapid breathing is to be undertaken, to have the patient sitting in a chair. The most favourable position for him, however, is that of lying down on the side; and it is generally best to throw a handkerchief over the face, so as to prevent the patient's attention from

being distracted. He should then be made to breathe at the rate of about one hundred respirations per minute. The direction best given is to "blow out" in rapid puffing expirationa. At the end of from two to five minutes, the patient continuing his rapid breathing all the time, teeth may be drawn or incisions made, and there will generally be an entire or partial absence of pain, which will last thirty seconds or more. The sense of touch is not affected, nor is consciousness gone. Regarding the practical uses of the method, it is claimed that it may supplant ether, chloroform, or nitrous oxide in dentistry, minor surgery, and often in obstetrics. In the latter case it is especially applicable when the forceps are to be used. The theories of how the rapid breathing acts in thus obtunding pain are as yet unsatisfactory. As far as the method itself is concerned, it seems to be well proved that analgesia to a greater or less extent can be obtained by it. Its practical usefulness is not so well established. A good many failures have occurred, and a large amount of evidence is yet to be obtained in order to show its reliability. The method is simple, however, and there ought not to be any trouble in speedily determining its exact value.—*N. Y. Med. Record*, Aug. 21, 1880.

THALAMIC EPILEPSY.

UNDER this title Professor Hammond, of New York, describes, in the August number of the *Archives of Medicine*, a form of epilepsy, the phenomena of which are simply hallucinations and loss of consciousness. He believes that the morbid anatomical basis of this type of epilepsy is seated in the optic thalamus, and he adduces reasons derived from physiological researches and from pathological observations for associating the form of the disease he describes and gives cases of, with disease in the thalami optici. Many facts in morbid anatomy, and in experimental physiology, show the relation between the several sensorial organs and the optic thalami. Ritti (*Théorie physiologique de l'hallucination*, Paris, 1874), who has collected many of such facts, has also gathered together other instances tending to establish the theory that hallucinations are the result of disease of one or both optic thalami. It is exceedingly probable, also, Dr. Hammond says, that the optic thalamus is the centre for perception, as the cortex is for intellection. In the cases which form the basis of his communication there were hallucinations without intellectual derangement. He therefore feels warranted in concluding that there was in each of his cases no lesion of any of the intellectual sensorial centres situated in the cortex, but that the disease was confined entirely, or nearly so, to the optic thalami; nearly so, because the loss of consciousness which ensued showed that there was that necessary cortical disturbance without which there can be, in Dr. Hammond's opinion, no true epilepsy. In these cases there were no muscular spasms. The motor disturbance, he explains, was substituted

by sensorial disturbance, and consequently there was sensorial epilepsy, or, as he prefers to call it—from the probable seat of the lesion—thalamic epilepsy. The views here expressed relative to the location of the lesion in cases of sensorial epilepsy are entirely opposed to those of Hughlings Jackson and Ferrier, who regard such cases as of cortical origin.

CASTS OF THE URINIFEROUS TUBULES.

DR. JAMES TYSON, in a paper read before the Philadelphia County Medical Society (*Philadelphia Medical Times*, March 13), makes the following general statements regarding the clinical significance of the different forms of casts:—1. Hyaline casts are found in all forms of Bright's disease, as well as in temporary congestions of the kidney, active or passive. 2. Epithelial casts are found in acute, subacute, and chronic parenchymatous nephritis. In the latter two forms the cells are generally degenerated and fragmentary. 3. Blood casts are found in acute parenchymatous nephritis, and when haemorrhages have occurred in the kidney. 4. Pale granular casts are found in interstitial nephritis and chronic parenchymatous nephritis. 5. Dark granular casts are found in parenchymatous nephritis, acute and chronic, and rarely in interstitial nephritis. 6. Waxy casts are found only in chronic Bright's disease, and attend either of the three principal forms. 7. Oil casts are found in subacute and chronic forms of Bright's disease, and may attend any of the three principal forms, but are most numerous in chronic parenchymatous nephritis (fatty kidney). 8. Free fatty cells and free oil drops are found in chronic parenchymatous nephritis. 9. The form of fatty cell, known as the compound granular cell, is found in acute and chronic parenchymatous nephritis. In the diagnosis of renal disease, it is to be understood that the quantity of urine and its chemical characters, as well as the clinical history, are to be considered. Still in many cases a diagnosis can be made from the urine alone, keeping in mind however that there are many instances of albuminuria where the absence of casts is reported in which the examination is at fault, from being carelessly performed.—*Boston Med. and Surg. Jour.*, July 29, 1880.

CLIMATIC TREATMENT OF CONSUMPTION.

DR. ANDERSON says that Davos is 5,200 feet above the level of the sea, prettily situated in a valley of considerable breadth, which runs N.N.W. and S.S.E., so that the sun shines upon it for many hours, even on the shortest winter days. Its soil is dry, and the air is still, for, except toward the S.E., it is sheltered by high mountains in every direction, while of course it is highly rarefied, being nearly one-fifth lighter than it is at the level of the sea. The months of December, January, and February are those during which patients at Davos are most certain to

be benefited, and if they do not improve then, and if there is no sufficient cause to account for it, their future prospects are far from bright. The class of cases which are most certain to do well are those of non-hereditary, uncomplicated, chronic phthisis, in which the extent of lung-tissue involved is not excessive—with this proviso, however, that while the prognosis of phthisis with pronounced stomach symptoms is not good at home, these are the very cases in which the patients should be sent to Davos, for there the appetite usually improves rapidly, and the digestive organs soon resume their normal vigour. Haemoptysis does not constitute a contra-indication. Laryngeal phthisis is only a little less likely to terminate unfavourably at Davos than in Great Britain. The causes of benefit are: 1. Elevation, with its rarefied atmosphere, bracing coolness, and its purity and antiseptic qualities. 2. Intensity of solar radiation, and the dryness and stillness of the air. 3. Accommodations are good, the sanitary arrangements excellent, the diet wholesome and nutritious, and the mode of living of the invalids (in the open air the greater part of the day, even in the depth of winter) carefully supervised by excellent medical men. Dr. Anderson gives notes of a few cases of advanced phthisis examined by him there, to illustrate the effects of a residence at Davos.—*Glasgow Med. Jour.*, April, 1880.

PERSISTENT PRIAPIST ASSOCIATED WITH LEUCOCYTHÆMIA.

In an article upon persistent priapism not connected with lesion of the central nervous system in the *N. Y. Medical Journal* of May last, Dr. Peabody adduced details of seven cases in which long-continued priapism was associated with leucocytæmia. In a supplementary note on the same subject in the last (September) issue of the same journal, Dr. Peabody cites three other cases in which the same condition of the penis in leucocytæmia was observed. It would appear to follow from a study of these ten cases that priapism must be regarded as an occasional symptom of leucocytæmia. As to the cause of the priapism, Dr. Peabody holds the theory that it is due to mechanical causes—viz., haemorrhages into the penis. Dr. Salzer, of Worms, believes that there are cases in which the cause must be considered purely a nervous irritation.

AMYL NITRITE IN THE ASPHYXIA OF THE NEW-BORN.

DR. C. H. HUMPHREYS publishes (*N. Y. Med. Record*, May 15) a case of asphyxia in an infant, in which, after prolonged trial of the usual methods for its resuscitation, inhalation of amyl nitrite had the desired effect.

ERRATA.

In the number of the Journal for September, page 254, line 12 from the bottom, for "removing" read "restoring."

In the same number of the Journal, page 288, for "Cus" read "Cusso."

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PART I.
ORIGINAL COMMUNICATIONS.

ART. XII.—*On Spinal Irritation, with Deformities of the Limbs and other Affections resulting from it, with their Treatment.* By WILLIAM A. ELLIOTT, Fellow and Member of Council, Royal College of Surgeons, Ireland; Senior Surgeon to the Whitworth Hospital, Drumcondra.

IN the category of nervous diseases there are few which come under our observation of greater importance, or which demand more careful consideration, than spinal irritation. This ailment is caused by functional derangement of the motor, sensitive, and sympathetic systems of nerves, the effect of which disturbance may be transmitted in a greater or less degree from the nervous centres to the various organs and parts which they are destined to supply.

The term "spinal irritation" which has been assigned to this affection may seem vague—conveying more the idea of a local ailment, affecting primarily some portions of the spinal cord—yet we frequently meet with persons in whom this irritation has been produced by cerebral impressions, arising from long-continued mental anxiety, mental shock, or from injury inflicted upon some part of the spinal column, any of which may prove the primary cause, the effect being afterwards evidenced by severe pain in some particular part of the spinal region—a result which can be easily understood when we reflect upon the nervous links which anatomically exist between the cerebral and spinal systems.

It is important that we should possess correct ideas respecting this ailment, as it is frequently productive of functional derangement of the thoracic and abdominal viscera which *a priori* might be mistaken for organic disease; hence the necessity for defining the relation between cause and effect, upon which the formation of our diagnosis must depend to guide our treatment of whatever organ or part may be affected.

Spinal irritation may exist merely as one of the concomitant symptoms which occur in persons of highly nervous temperament; and although prolonged and distressing as may have been the sufferings of some who have laboured under this ailment, yet it is satisfactory to know that it has been rarely followed by fatal results. Consequently we have been precluded from obtaining pathological evidence of the true exciting cause of this affection; and even in some few instances when opportunities for examination had been afforded, no satisfactory results were obtained. Therefore, upon this important part of the subject, we can only entertain hypothetical views. Yet, although pathology has not afforded the evidence which we would desire, experience has supplied us with ample means of guiding our treatment in any of the varied phases which this affection may assume.

Much valuable information has been afforded by members of our profession who directed attention particularly to the consideration of this subject, and whose opinions for the most part coincided as to the source of the nervous irritation, and in many respects as to the curative treatment; yet they differed in theory respecting the exciting cause, and it is reasonable to expect that differences of opinion will continue to exist until our information becomes based upon pathological facts.

Spinal irritation is an ailment to which females are peculiarly liable, yet it sometimes occurs in boys, and occasionally, but rarely, in men. In the latter I have observed it only in persons of preternaturally nervous temperament. Puberty is usually the period of life at which it becomes developed, yet I have seen well-pronounced cases from the early age of twelve years to a considerably advanced period of life.

Many of the symptoms which I have observed in young persons when contrasted with those of more mature age, differ so essentially in character that I consider the affection should be classified as hysterical and non-hysterical.

When examining the spine of a person suffering from this affection,

I have observed the morbid sensibility of the skin and the pain complained of on very gentle pressure or even passing of the finger lightly over the part. This tenderness may either extend along the entire length of the vertebral column or it may exist at different points, or merely at one isolated spot; and although this uneasiness may be found extremely variable, yet the part where the pain is most acutely complained of may be easily detected by passing the finger firmly along the spinous processes, when, upon reaching the tender part, the patient will instantly start forward and wince from the pressure.

The mode which some persons adopt when endeavouring to relieve themselves from these painful sensations is remarkable. I have frequently seen patients, whilst in the sitting posture, place the spine against the back of the chair, and, with both arms passed round it, make strong pressure against the most painful part, which they would not allow another person even to touch. I have also met with patients who fully enjoyed horse exercise, but could not tolerate the motion of an easy carriage.

I have frequently observed, when pain has been referred to about the central part of the dorsal region, many persons have expressed their feelings in almost identical terms. They describe the course of the pain as gradually advancing forwards from the spine along the ribs and towards the mesial line of the abdomen; on arriving at this part the pain becomes more intensely felt, and produces a sensation as if the body had been severely squeezed or crushed. The pain then gradually diminishes and makes a slow retrograde movement, precisely along the same track, until it reaches the spine at the part where it began. A cessation of pain is then experienced, which is soon followed by feelings of bodily fatigue and general languor. This pain may originate in the dorsal region, or, *vice versa*, it may commence in the abdomen and extend to the spine; but when it takes the latter course the symptoms will be found much more distressing and prolonged than the former.

If we trace this affection of the spine from above downwards, we shall find symptoms successively developed in parts which derive their nervous supply from the cervical, dorsal, and lumbar regions. Thus, when pain and tenderness exist at the highest part of the cervical vertebræ, if we press the point of the finger firmly upon the place, we can detect with some accuracy the affected parts which derive their nervous supply from the medulla oblongata. The pains usually complained of are those which extend up the sides

of the face and jaws to the temples, eyes, eyelids, forehead, and scalp, accompanied with a general *malaise* about the head, and causing giddiness when the patient attempts to look directly upwards. The senses of vision, taste, and hearing may become affected either singly or collectively, and it will be found that these symptoms may become increased if the digital pressure be continued.

Should the spinal accessory nerves become the seat of irritation, the nervous supply to the sterno-mastoid and trapezius muscles may preponderate at one side; the balance of muscular action becoming thus disturbed, an undue amount of traction of the head and neck to one side will be the result; the head will become gradually more inclined towards the shoulder, with the face turned round, and looking upwards over the opposite shoulder, producing *wry neck*, the spasmodic form of which is one of the most difficult and intractable deformities with which we have to contend.

When the pneumogastric nerves become engaged, their numerous ramifications will be found to give rise to many troublesome and formidable symptoms, producing functional derangement of the organs with which they are connected.

When irritation is found to exist at the lower part of the cervical and upper portion of the dorsal vertebræ, persons will complain of pain extending to the shoulders, upper part of the back and chest, along the arms, and down to the hands and fingers.

When the central part of the dorsal region becomes affected, some patients will complain of painful and uneasy sensations, which are frequently referred to the region of the stomach; and if the spinous processes at the most tender part be firmly pressed upon, nausea will sometimes be produced.

As we trace this affection further downwards along the spinal column, we find functional derangement produced in the liver, intestines, kidneys, bladder, and uterus, any one or all of which may become affected.

The hysterical form of spinal irritation is that which comes most frequently under our observation, and is generally associated with disturbance of the sympathetic, sensitive, and motor portions of the nervous system—in the former producing derangement of the functions of the heart, respiratory and digestive organs, and in the latter giving rise to spasmodic muscular action of the extremities. In the upper extremity, affecting the motions of the head and neck, shoulder, elbow, wrist-joints, hands, and fingers, and in the lower

affecting the hip, knee, ankle-joints, feet, and toes. This spasmotic action is frequently followed by obstinate contractions in muscles, joints, and other parts, which, if not early counteracted, may result in deformities which cannot be redressed without the intervention of operative surgery.

Distortions of the limbs, which derive their origin from hysterical causes, require to be carefully diagnosed, and it is sometimes difficult to determine the exact nature of some of these affections, so prone are they to simulate actual disease. But when the hysterical character of the ailment has been ascertained to exist in one of the large joints, the limb may, by steady manipulation, be brought from a state of flexion into the extended posture, and retained *in situ* by simple appliances.

I have frequently had recourse to this mode of treatment when the knee and hip-joints were contracted, and in some cases have been obliged to use considerable force, but in others I have succeeded without much difficulty in bringing the limbs into their natural extended position. The same facility is not afforded us when the wrist-joints and hands are affected, combined with a rigidly flexed condition of the fingers; and when contractions from like causes take place in the ankle-joint, foot, and phalanges of the toes, the treatment in those cases will be found more difficult, complicated, and tedious than in the larger joints.

I have merely epitomised my observations respecting the nature, symptoms, and consequences of this ailment. But to enter fully into the details of all the varied and anomalous phases which are presented, or to attempt their classification, would not only be superfluous, but almost an endless, if not an impossible, task to undertake.

For practical purposes, I have confined my remarks to the effects produced upon the constitution, the muscular system, and deformities which have resulted in persons who have suffered from spinal irritation, and I shall endeavour to elucidate this subject by detailing some cases which I have selected from amongst many which have come under my observation and treatment.

The following case having been brought under my immediate observation, and having assisted in the treatment of the patient, I am enabled to give the history of the symptoms and management from notes taken by me during the patient's stay in hospital:—

CASE I.—*Spasmodic Wry Neck.*—W. W., aged twenty-three years, was admitted into the Richmond Hospital, under the care of the late

Dr. Hutton, for spasmodic wry neck. Patient complained of pain in the upper portion of the cervical region, which became increased by pressure of the finger upon the spinous processes. The head was drawn down towards the right shoulder, and the neck turned round, with the face looking upwards, and over the left shoulder; any attempt to bring the head and neck into a straight position produced severe spasmodic muscular action, giving rise to considerable increase of the deformity. The patient was occasionally seized with involuntary spasms in the neck, which he much dreaded, as they were attended with exquisite pain, from which he endeavoured to relieve himself by placing one hand against the back of the head, and the other against the jaw on the opposite side.

The treatment of this case, which was steadily pursued for nearly a fortnight, consisted of constitutional, local, and mechanical means, the result of which having proved unsatisfactory, Dr. Hutton determined upon dividing the clavicular attachment of the sterno-mastoid muscle, which part seemed to offer the greatest resistance.

The subcutaneous operation was not adopted, as Dr. Hutton preferred making a free division of the skin parallel with the clavicle. This portion of the operation having been done, and the entire attachment of the muscle being exposed, he passed a director behind the tendinous structure, and with a bistoury divided the contracted part, producing an immediate retraction of the muscle, which became full and prominent, followed by total cessation of spasm. The wound was carefully dressed for about a week, and the patient having derived much relief, and all progressing well, it was deemed advisable to re-apply the instrument which had been tried at first, for the purpose of maintaining the head and neck in their proper positions. The instrument was again worn during part of each day, and produced no inconvenience. The external wound healed quickly, but during the progress of reunion of the subjacent parts the patient complained of uneasy sensations and pain along the course of the sterno-mastoid muscle and side of the neck, which gradually increased in an equal ratio with the healing process, which, when completed, was soon followed by a return of all the former spasms, and this man left the hospital almost in the same state as when he was admitted.

After a lapse of about twelve years I met W. W. walking on a country road, and at once recognised him, when at a considerable distance, by the strange twitchings and jerkings of his head and neck, appearances which were quite familiar to me. He seemed in very good health, and but little altered in appearance since last I had seen him. He gave me the following short but interesting account:—Soon after leaving the hospital he obtained a lucrative employment, in which he was engaged upon the coast of Africa. During his stay there he felt no pain or inconvenience whatever in his neck, which had become perfectly straight,

and all the motions of which he could perform with the greatest ease, and felt quite relieved from all his former sufferings. However, upon his return to Ireland, all the symptoms reappeared, and I found him just in the same condition as when he left this country.

I consider this case of much practical importance. The operation was most skilfully performed by the late Dr. Hutton, and the subsequent management conducted by me under his surveillance; yet the treatment proved of no avail, the relief which the patient substantially experienced being due to change of climate, and the influence produced by it upon the general system.

From my own experience, and what I have seen tried in the treatment of these cases, I am led to believe that operations of tenotomy for the cure of spasmodic wry neck are not followed by results as satisfactory as those of the non-spasmodic form.

I have had opportunities of examining persons who had been suffering from spasmodic wry neck, and upon whom division of the contracted sterno-mastoid muscle had been performed several years before, and although the deformity was to some extent lessened, yet to the present time they not only bear well-marked characters of the affection, but still complain of nervous twitchings and uneasy sensations about the head and neck.

CASE II.—*Spasmodic Wry Neck resulting from Injury.*—Mr. A., when aged about forty years, was thrown from a car upon which he was driving, and fell heavily upon the back of his head, bending it forcibly forwards. He was stunned by the accident, but soon regained his consciousness. For a few days afterwards he felt pain and stiffness in the back of his neck, which gradually passed away, and feeling no further inconvenience he resumed his usual business. Four years after the accident he began to experience strange involuntary twitchings in his hands and fingers, which extended along the arms and shoulders to the nape of the neck and to the upper cervical vertebræ, at which part he felt considerable pain, accompanied with muscular spasms in the neck, which resulted in the development of an extremely aggravated form of spasmodic wry neck, and entirely deprived him of the power of writing, which proved a source of much unhappiness to him, as he was extensively engaged in business.

This gentleman had been under the care of the late Sir Philip Crampton, who, finding different modes of treatment unavailing, divided the sterno-mastoid muscle, and the operation, with subsequent mechanical treatment, was followed by much relief. It is now about thirty-eight years since Mr. A. underwent the operation, and although he has enjoyed

excellent health, and is still a person of very active habits, yet to the present time he retains all the well-marked characters of wry neck, with chronic spasmoid muscular action, which now seems to give him but little concern.

CASE III.—Spasmoid Wry Neck resulting from Injury.—Mrs. R., aged thirty-eight years, consulted me in August, 1879, for a spasmoid affection of her neck. She informed me that two years previous to my seeing her she had been travelling by railway when an accident occurred, by which the train became suddenly stopped, causing a collision of the carriages, and injuring some of the occupants. The head of the person sitting opposite this lady was dashed violently forwards, and, striking the left side of her face, turned her head forcibly round to the right side, producing severe torsion of the neck, in which painful position it remained for nearly two hours, when the head and neck again regained their natural position.

Immediately after the accident this lady was placed under surgical treatment, from which she derived much benefit, yet for six months she was never quite free from unpleasant sensations about her neck, at the end of which time she felt at intervals slight painful twitchings in her neck, with inclination of the head towards the right side, which symptoms gradually increased until the balance of muscular action had become so much disturbed that when she consulted me I found her suffering from spasmoid wry neck. The head was turned to the right side, and the face looking upwards and towards the shoulder, with rigid contraction of the sterno-mastoid muscle. She complained of weakness in her neck and pain along the cervical vertebræ, particularly at the upper part, which was much increased by gentle pressure of the finger.

I attended this patient for a short time, and directed my attention to the alleviation of the pain in her neck, in the hope that when it became subdued the spasmoid state of the neck might also be controlled. Under the treatment which I adopted the pain in the cervical region ceased, and the spasmoid condition had greatly diminished, yet the head and neck still retained their former contorted state. I gave her a leather collar for the purpose of supporting the head and neck and keeping them in proper position. It is now a year since first I saw this lady, and having visited her lately, I found her still suffering from the spasmoid condition of the neck, but in a much less degree, and perfectly free from pain.

CASE IV.—Spasmoid Contraction of the Hand and Fingers resulting from Mental Shock.—Miss H., aged twenty-eight years, a person of nervous temperament, apparently healthy and strong, yet of somewhat delicate constitution, consulted me some years since for spasmodic contraction

of the left hand and fingers. She informed me that she had been suffering from this affection for nearly two years, prior to which time she enjoyed very good health. She attributed her ailment solely to mental shock produced by the sudden intimation of the death of a near relative, which was immediately followed by stiffness and pain in her neck, and by a sudden and rigidly flexed state of the hand and fingers, in which clenched position the hand remained by day and by night without any interval of relaxation.

Upon examination I ascertained that pressure upon the lower cervical vertebræ produced pain, with a morbidly sensitive state of the skin covering the part. The hand was tightly closed with the thumb lying across the palm, and firmly grasped by the fingers. I endeavoured gently to liberate the thumb by extending the fingers, but this trial I abandoned, finding that the attempt was followed by an increase of spasm and pain, which extended up the arm and shoulder until it reached a point between the lower cervical and upper dorsal vertebræ, producing the sensation (which she described) as if a painful cord extending from the hand along the arm and reaching upwards to the nape of the neck had become suddenly tightened.

This lady from the commencement of the attack had received all the care and attention which her medical attendant could bestow. He had adopted various means in endeavouring to alleviate her suffering and to extend the hand and fingers, all of which resisted his best efforts. She was then recommended change of scene and air, and accordingly she made a tour through France and Germany, and after some weeks returned home, her general health being much improved, but her hand remaining all the time in its firmly closed condition. The ends of the fingers and nails became imbedded into the palm of the hand, which was swollen and ulcerated from constant pressure, which rendered it necessary to have some prompt measures adopted.

It was suggested that division of some of the tendons might have the effect of relieving the contraction. However, the future management of the case having devolved upon me, and not considering tenotomy advisable, I adopted the following treatment:—I attempted gradually to extent the hand and fingers by means of an instrument which I had constructed some years previously, and which I found most efficacious in the treatment of contractions of the palmar fascia.* In construction this instrument was made to simulate somewhat the motions of the hand and fingers, to one or all of which it could be applied, as the case might require.

For the first few days my attempts at extension produced considerable

* *Vide* my observations upon this subject published in The Dublin Medical Press, 18th February, 1861, on Contractions of the Palmar Fascia and its mode of Treatment.

pain in the hand and up the arm to the nape of the neck. The instrument, therefore, could only be worn for a short time; but immediately on its removal I placed the hand upon a light splint, the angle of which could be altered in proportion as the fingers became extended. By daily pursuing this course the spasmodic contraction of the muscles was diminished, and the hand and fingers became gradually restored to their normal action; yet when unrestrained the hand displayed a lingering tendency to resume its former contracted condition. I therefore directed that the splint should be worn by day and by night until all spasmodic action had ceased.

I experienced more difficulty in the treatment of this case than I had anticipated. The long-continued state of contraction of the flexor muscles not alone produced closing of the hand, but also favoured contraction of the fibrous and other tissues in the palm of the hand and fingers. This patient, after some weeks, perfectly recovered the use of her hand, and was able to resume her piano-forte playing, which was one of her chief amusements.

Hysterical Affection of the Hip-joint simulating Morbus Coxæ.— We are occasionally consulted respecting patients affected with paralysis resulting from hysterical causes accompanied with spinal irritation. The temporary loss of motor power may exist only in some isolated part, or its influence may be more extended, engaging the entire of either the upper or lower extremities. In the latter case I have met with persons in whom the hip, knee, and ankle-joint were affected; and in some instances the symptoms complained of and general appearances of the parts so closely simulated actual disease as to require much care in forming any diagnosis.

The following case will tend to illustrate this hysterical affection in the hip-joint and entire of the lower extremity:—

CASE V.—Some years since I was consulted by a lady respecting her daughter, who was aged about thirty-five years, and who, I was informed, had lost the entire power of the right lower extremity, and was also supposed to be suffering from morbus coxae at the same side, with considerable weakness and loss of power in the opposite limb. She had been for some months subject to constant sickness of the stomach, and in consequence of the frequent rejection of her food had become weak and emaciated, and constantly remained in the recumbent posture from apparent inability to change to any other.

Upon examination I found considerable obliquity of the pelvis; the right hip was drawn upwards, with apparently an abnormal amount of rotation inwards of the thigh, leg, and foot; she complained of pain in

the hip-joint when I attempted to rotate the limb outwards, whereas rotation inwards could be easily effected and without any inconvenience. The opposite limb was comparatively powerless, and admitted of being freely moved without causing any pain.

Viewing the patient as she lay in bed, the right limb simulated in many respects that of a person labouring under *morbus coxae* in its third stage. Having brought the pelvis into its natural position the limbs became restored to equal length. I then had the patient supported and placed in the erect posture, when further investigation fully demonstrated the total absence of disease in the joint.

When examining the spine there was a morbid amount of sensibility of the skin, which she could not bear to be touched. She also complained of sharp pain on pressure of the finger being made upon any of the spinous processes from the upper cervical to the lumbar region. I have seldom witnessed a case in which more functional disturbance existed than in this patient. I may say almost all the thoracic and abdominal viscera became alternately affected, and occasionally to a very severe extent.

It would be difficult to detail all the various symptoms which from time to time were presented in this case, or the different modes of treatment which I adopted—suffice it to say that suitable remedies were prescribed, and with advantage, as symptoms occurred. The diet was carefully regulated, and consisted of the most nourishing description that the stomach could bear, and also a moderate amount of effervescent wines, which seemed to agree best with her. A decided improvement having taken place in the general health and strength of the patient, and she having greatly regained the power over her limbs, I advised her to take a short sea voyage, which suggestion was adopted, and with such good results as to warrant my recommending her undertaking a long voyage, to which she consented, and after an absence of several weeks returned home perfectly restored in health and in strength.

CASE VI.—Spasmodic Contraction of the Foot consequent upon Fever.—An eminent member of our profession consulted me some years since respecting three of his daughters, who, he informed me, were about the same time attacked with some severe form of fever, which lasted for several days, in the early stage of which cerebral symptoms became developed, and on the subsidence of which each of the invalids was seized with painful contractions of their limbs.

In one girl from the shoulder down to the hand was in a state of spasmodic contraction, with flexion of the elbow-joint. In the second the muscles of the hip-joint and thigh down to the knee were similarly

affected, the limb being drawn upwards and rotated inwards. In the third daughter the muscular spasm attacked the leg, producing distortion of the ankle-joint and foot.

Not having seen the patients, I could only form my opinion upon the short statement which I had received, and being of rare occurrence that three members of the same family should almost simultaneously be attacked with contractions of the limbs, I conceived it probable that the symptoms might be of an hysterical character and in some degree imitative. I therefore advised that a complete and prompt separation of the sisters should be made, and each to be located with some friend, and placed under proper medical supervision. I also recommended that no mechanical means should be had recourse to for the purpose of straightening the limbs, as such a procedure might be followed by serious consequences if a sufficient length of time was not allowed for subsidence of the brain irritation which then existed.

I heard nothing respecting these young ladies for some months after giving my opinion, until again being consulted about the youngest daughter, who was still suffering from contraction of the foot, and for whom no attempt had been made to remove her deformity; but this course unfortunately had not been pursued with the other two sisters, who had been subjected to some kind of mechanical treatment, and both of whom died, but from what immediate cause I was not informed.

The third sister was brought to Dublin for my opinion. She was aged about seventeen years, a strong and healthy-looking girl, with well-developed muscular system, but of highly nervous temperament. She complained of no ailment except the painful contraction of her foot, with consequent inability to move about without the aid of crutches.

Upon examination I found the right foot in a state of spasmodic contraction, and presenting all the well-marked features of a case of varus. The heel was drawn upwards, and elevated about four inches from the ground. The foot was rotated inwards, and rested entirely upon its outer edge, with the plantar surface looking directly inwards and towards the opposite limb. In the erect posture she was only able to rest upon the outer edge of the foot, and when she attempted to throw the weight of her body upon the limb the deformity became so much increased as to render the foot quite powerless.

When examining the spine there was extreme tenderness of the skin engaging the entire length of the column, and she complained of pain even when I passed my finger gently along the spinous processes, at some parts of which the pain was much more acutely felt than at others.

A lapse of several months having taken place since the commencement of the febrile attack, and the case having assumed a chronic character, I considered the proper time had arrived when, with safety, measures should be adopted for restoring the foot to its natural shape. I tried for

a few days by means of a suitable instrument to extend gradually the contracted parts, but finding (as I had anticipated) that my efforts only produced an increase of muscular irritability and contraction of the limb, I advised that the tendo-Achillis should without further delay be divided, at the same time expressing my wish to have the opinion of a second person. This suggestion having been complied with, I met in consultation the late Surgeon Robert Adams, who quite coincided with me as to the nature of the case and the necessity for the operation, which was performed the following day.

I placed the patient on her face upon a mattress, and the foot being held by an assistant, the tendon was easily divided, cutting from behind forwards. Immediately after the operation the spasm ceased, and the foot became relaxed, and she expressed herself as being relieved from the former pain and tension in her leg and foot. The patient was kept quiet, and everything progressed satisfactorily. The puncture in the skin having healed, I put the instrument for extension upon the foot on the fourth day after the operation, and by its daily adjustment the foot became perfectly restored to its natural shape. In five weeks after the operation she was enabled to wear a leather boot, with a steel spring attached to it for the purpose of retaining the foot in its proper position. With this appliance she was enabled to move about her room. The tendon having united, and the parts having acquired sufficient strength, I allowed her to walk out for a short distance; and in seven weeks after the operation she returned home, having regained the use of her limb.

CASE VII.—*Spinal Irritation, produced by Reflex Nervous Action, resulting from aggravated Dyspepsia.*—Mrs. M., aged forty-three years, consulted me respecting pain and general uneasiness which she felt in the back of her neck, and also for pain of intense character which she suffered in the dorsal region, with weakness of the entire spinal column.

Upon examination I found tenderness existing along the cervical region, and also in the dorsal, reaching to about the sixth or seventh vertebra; the skin covering those parts was very sensitive, and slight pressure made upon the spinous processes caused additional pain. Her countenance was pale and indicative of protracted suffering. The action of the heart was weak; pulse about eighty, and compressible; tongue clean, but inclined to dryness. There was tenderness over the epigastrium, and she complained of constant thirst. This lady, notwithstanding all her suffering, was possessed of a peculiarly placid temperament, and by no means of an hysterical diathesis.

The statement given by this patient of her case was that she had been suffering for several months from pain in her neck, which extended forwards and along the jaws, to both sides of the face, forehead, and scalp, and downwards along the shoulders, arms, and hands to the extre-

mities of her fingers, which produced so much feebleness of both upper extremities as to render them almost powerless. She was unable to write or attempt any description even of simple work, yet those symptoms she considered but trivial when compared with the distressing sensations of weakness and sinking of her body, and the agonising pain which she felt in her stomach and back whenever she made use of solid food.

This pain she described as commencing in the stomach and extending backwards until it reached the central portion of the dorsal vertebræ; on its arriving at this point she felt as if the pain had reached its climax, and it persistently occupied this part for some hours, resisting all remedial means for its alleviation. She seldom felt relief from this pain until either the stomach ejected the food, or what I imagine (from her description) must have taken place, the passing of some solid morsel of food through the pyloric orifice of the stomach. The pain *in transitu* she described as being excessive, but when the offending substance had passed into the duodenum there was an immediate cessation of pain both in the stomach and back, which was so instantaneously felt that she described it as like an electric shock.

When the attack had passed off it was followed by prostration of strength, which lasted for three or four days, during which time she lived chiefly upon nutritious fluids mixed with crumbs of bread. During the paroxysm she said she could bear the part of the spine where the intensity of pain was greatest to be well hammered with the clenched hand, but when the pain had subsided, the skin covering the part became so extremely tender that for some hours she could not bear it to be touched.

The constitutional and local treatment of this case was clearly indicated. Light tonics combined with bismuth were given, and, when requisite, warm antacid aperients to correct the deranged condition of the digestive organs. Dry cupping was used along the affected portion of the spine, and afterwards the linimentum camph. co. with tinct. opii, aconite, and extract of belladonna were applied upon lint, covered with oiled silk, over the cervical, dorsal, and epigastric regions, and those applications were repeated three or four times daily until the pain had abated.

The diet consisted of the most nourishing food which could be given in a fluid state, with crumbs of toast; afterwards, when pain about the stomach had ceased, she was able to take a little meat finely minced up, and occasionally brandy and kali water.

Under this treatment the pains gradually subsided, her appetite became improved, and she seemed again to enjoy her meals, which produced no pain or inconvenience. When she attempted to walk she felt the weak and sinking sensations in her spine; and feeling apprehensive of the pain returning, I ordered her to use a very light instrument, which gave general support to the body. This proved a great source of comfort, and

enabled her to move about and to take her accustomed exercise of walking and driving. The support was only worn for a few weeks, when she had so recovered as to be enabled to dispense with it and to move about with ease and comfort. I had an opportunity of seeing this lady some months afterwards, and she informed me that she felt quite well and free from pain, and was able to take her usual walks, but that she was obliged to be particular in her diet, and to avoid fatigue of any kind.

CASE VIII.—*Spinal Irritation caused by Mental Anxiety.*—Mrs. E., a widow, aged about fifty-six years, a healthy and strong looking person, consulted me four years since respecting deafness of both ears, accompanied with distressing sensations of constriction and general discomfort about her head—the symptoms becoming increased by mental excitement to such an extent that she expressed apprehension of being seized with a fit. She informed me that she had been free from any particular ailment previous to the time of her consulting me, but she could not exactly fix the period at which the symptoms first commenced, so variable and gradual were they in their development; at times they were only slight, but at others they were very distressing. She attributed all her complaints solely to a succession of family afflictions mainly caused by the deaths of some of her children.

Suspecting the nature of this case, I examined the cervical region, the entire of which was very sensitive and painful to the touch, and upon making pressure on the upper spinous processes the pain became greatly increased, and she immediately complained of increased discomfort and tension about the head, which she said felt as if it had been compressed by a machine. She also complained of pains extending up the sides of the face, temples, and forehead, to the scalp. Any attempt at looking directly upwards was followed by giddiness and apprehension of falling.

I frequently attended this lady from the time of her first consulting me, during which period her symptoms were extremely variable. She occasionally complained of stomach derangement, general restlessness, and loss of appetite; at times she suffered from deafness, and at others she could hear most distinctly, but she was seldom quite free from pain in her neck and unpleasant sensations about her head. I was fully aware of the severe family afflictions through which this lady had passed, and the amount of mental depression consequent upon it. I visited her lately; and although much improved in every respect, and able to take walking and driving exercise, yet her ailment has assumed a chronic form, which we can only hope may be removed by time and judicious management.

ART. XIII.—Can the Mildest Forms of Enteric Fever be distinguished from Acute Febrile, but Non-specific, Gastro-enteric Catarrh? By CHRISTIAN BÄUMLER, M.D., F.R.C.P. Lond.; Professor of Clinical Medicine in the University of Freiburg in Baden.

CASES in which the question arises whether we have to deal with a mild case of enteric fever or simply with acute gastro-enteric catarrh, are not of rare occurrence; and it may sometimes, at least for a time, be a matter of great difficulty for the physician to arrive at a definite conclusion. Yet a correct diagnosis may be of great importance, and if any proof of the general importance of this question were needed, it would have been furnished by the discussion^a which last year took place in the Dublin Medical Society on Dr. Cameron's paper,^b and by the papers which, in connexion therewith, have appeared in this Journal.^c Having for years past paid great attention to this question, I was very much interested in reading those papers, the more so as, only a short time before, a number of cases of mild enteric fever which had been under my own care at the hospital had induced me to bring the subject before the Medical Societies of the Upper Breisgau at their annual meeting on July 24th, 1879. Thus prepared, the reading of the report of the Dublin discussion impressed me, if possible, still more with the important bearings of the question, and if I now venture again to take up this subject, it is because I have missed in the discussion, as well as in the papers connected with it, any allusion to a symptom which for differential diagnosis in such cases appears to me very important—in fact, the most important of all.

The teaching which prevailed in Germany at the time when I entered on my medical studies assumed the existence of a "febrile gastric catarrh" as a distinct and not uncommon disease, which, in its fully developed form, was generally described as "gastric fever." However, not only the similarity in some of the principal symptoms, but, in some cases, the evident relation of this disease to enteric fever had not escaped the attention of some observers; and the view that this disease was intimately related to enteric fever obtained its scientific foundation by the closer study of cases which from their etiological surroundings could be distinctly recognised as

^a The Dublin Journal of Medical Science. July, 1879. Pp. 66 to 72.

^b Ibidem. Page 1.

^c Ibidem. October, 1879, p. 269. November, 1879, p. 368.

mild or abortive forms of enteric fever. Griesinger was the first who had a number of such cases published by Dr. Schmid,^a one of his pupils, and since that time others^b have followed. Having myself, very early in my professional career, had the opportunity of carefully watching a number of such very mild cases of undoubted enteric fever, the symptoms of which coincided with what the textbooks described as "gastric fever" or "*Febriler gastricismus*," and having in this way become sceptical as to the nature of the disease going by that name, I have ever since been on the look out for cases of true "gastric fever"—i.e., a febrile catarrh as a *local disease* of the mucous membrane of the stomach or, may be, of the small intestines too, accompanied by pyrexia of about a week's duration or more, and by general febrile symptoms. Now, I must confess that I have never seen an undoubtful case of this kind; that, on the contrary, in almost every case which might have fallen under the description of "gastric fever," the diagnosis of enteric fever could by and by clearly be established, or that the pyrexia, of a remittent type generally, could be traced to some other *local disease*—of the lungs, for instance (commencing phthisis)—and that the gastric disturbance, so far from being the *cause* of the pyrexia, was only a *symptom* of the febrile state, and disappeared at once with the abnormal blood-heat.

In all cases, on the contrary, which, on more careful and closer examination, turned out to be either mild or abortive cases of enteric fever, or which gradually became fully developed into well-marked forms of this disease, there could be made out, mostly from the very beginning, a *decided enlargement of the spleen*, a symptom which clearly points to the *infectious* nature of a given disease, and the occurrence of which in a simple catarrh of the lining membrane of the stomach would be quite unintelligible, and, in fact, does not exist. This enlargement of the spleen, which in some cases, even on the second day of illness, may be so considerable that the border of the organ can be felt below the ribs, whilst in others it can only be made out by percussion, is *the* symptom on which, I think, most stress must be laid in judging of such cases; for of all the symptoms of enteric fever, besides the pyrexia, this is the most constant, and it is of more value for diagnosis than the pyrexia itself, inasmuch

^a J. J. Schmid. Ueber den Typhus levissimus. Dis. inang. Zürich. 1862.

^b The Author. Deutsch. Arch. f. klin. Med. Vol. III, p. 387. 1867. Th. Jürgenson. Ueber die leichteren Formen des Abdominal-Typhus. Volkmann's Sammlung klin. Vorträge. No. 61.

as a febrile state of exactly the same range of temperature and running the same course, as in a mild case of enteric fever, may be caused by some non-infectious local disease, whereas an enlargement of the spleen in an acute illness, unless caused by some disease of the liver, heart, or lungs, clearly points to blood-poisoning. Such an enlargement of the spleen has been present in all cases of abortive or mild enteric fever which came under my own observation, in London as well as in several places in Germany, and I have no doubt it will be found wherever cases of enteric fever of this mild form occur. The difficulty of making out an enlargement of the spleen in these cases is generally even less than in cases of well-developed enteric fever, in which the tympanites sometimes makes it quite impossible to trace the spleen by percussion, and still more to feel it.

In isolated cases of mild enteric fever the symptoms alone must be relied upon for a correct diagnosis, which is then based on the presence of pyrexia—generally with a more sudden onset and a quicker rise than in the ordinary forms of enteric fever—together with enlargement of the spleen, a slightly furred tongue with some gastric or gastro-intestinal disturbance, with headache and general lassitude, sometimes with considerable prostration; in rare cases of somewhat more prolonged duration with the occurrence of rose spots on the skin. When the chief symptoms are not well marked the diagnosis may become impossible; but whenever a number of similar cases occurs in the same locality the true bearing of them becomes at once clear, and every doubt is removed when among such cases there are some in which the symptoms of enteric fever become fully developed.

Of other morbid conditions with which such mild cases of enteric fever may be confounded, catarrhal affections of the stomach and intestines must in the first instance be considered. There are cases of common acute enteritis which, for a time, as to the general symptoms very nearly resemble the cases in question—the height of temperature and the course the pyrexia runs may be exactly similar, the tongue is generally more furred, but here also, if the patient sleep with his mouth open, we may get the red tip and edges of the tongue and sometimes the dry streak from the tip backwards, but there is no enlargement of the spleen; there may be marked distension of the abdomen, much more so than in cases of mild enteric fever; there may be not only tenderness but much pain in the cæcal region, where very soon a hardness or a distinct

tumour appears, which is due to submucous and peritoneal exudation. There can then be no more doubt about the case, if indeed the suspicion of a typhlitis or perityphlitis had not been raised from the very beginning.

Catarrhal inflammation of the gastric mucous membrane, such as occurs after taking indigestible food, or after excesses in alcoholic beverages, or which, in persons with a special disposition, may occur even after exposure to cold, is generally unaccompanied by pyrexia, or only a very moderate rise of temperature to about 101·5° or 102° takes place, and if the case be properly treated this pyrexia subsides in a day or two. In cases of this as well as of the former kind the temperature may exceptionally reach a higher point, and its elevation lasts several days in individuals who, after any trifling exciting cause, are subject to febrile attacks; but in these cases, as well as in the previous ones, enlargement of the spleen is absent.

The cases of a slight infection with, or an unusually mild reaction to, the poison of enteric fever present a great variety of forms, although in their leading features—viz., the pyrexia, the enlargement of the spleen and those gastric and other symptoms which are chiefly due to the febrile blood-heat—they are identical. But there is one point which has been noticed by almost all who observed and described such cases—namely, that the mildness of the attack does not so much consist in the slightness of the symptoms as in the shortness of the whole attack. The symptoms may be rather grave in a case of hardly a week's duration; and, on the other hand, in a case of fully-developed enteric fever of three or four weeks' duration they may be so mild that the patient can with difficulty be kept in bed. In many cases of very short duration the onset is very acute, and the gastric disturbance, not infrequently marked by vomiting, very prominent.

If it be granted that cases of acute illness in which, beyond the general febrile symptoms, an early enlargement of the spleen takes place are due to some infection, it is not at all improbable that other infective agents besides that of enteric fever may, under certain conditions, produce very similar forms of disease. Cases of mild or abortive typhus may be undistinguishable from cases of mild enteric fever—the characteristic eruption being frequently absent in both, or a rather profuse eruption, coming on very early, being present in mild cases of enteric fever. There may be other, as yet less well known, infections having a similar effect on the

body to that of the infective agent of enteric fever. Thus, some occurrences which have quite recently been more carefully sifted by Dr. Huber^a seem to support the view that the ingestion of diseased meat may produce symptoms not only of acute poisoning very much like those of cholera, but in some instances of an acute infectious disease of longer duration and resembling enteric fever, even to the eruption and some important *post mortem* alterations. Although Dr. Huber possibly goes too far in his scepticism as regards at least some cases of the epidemic which occurred at Kloten, in Switzerland, in June, 1878, still the views which are opened by his criticism, and by his references to some more clearly established instances of "meat-poisoning," deserve every attention. He has, at all events, shown that the ingestion of putrid meat may produce symptoms and tissue-changes in the intestines which may easily be confounded with those of enteric fever. In these cases the causation of the disease by an infection through the alimentary canal seems to be established beyond doubt, and Dr. Huber thinks he has made out a case that the infection is due to some kind of bacillus; that, in other words, it bears some relationship to splenic fever. Now, it is not improbable, though not yet proven, that enteric fever also is caused by some organised infective agent which—and there is no doubt about this point—is contained in decomposing organic, and more especially faecal, matter. Whether its germs must always be derived from previous cases of enteric fever, as was so strenuously maintained by Dr. Budd, or whether, like the organised germs of ordinary putrefaction, they are everywhere present, and only need the concurrence of certain external circumstances favouring their prolific development, is a question still *sub judice*.

The latter view would coincide with the opinion held by Dr. Murchison of the "pythogenic" origin of enteric fever; and I must say that some instances of enteric fever which have come under my own observation have forced me to acknowledge the occurrence of that disease in localities into which an importation of the specific poison from a previous case could by no means be made out. Occurrences like these have led me to think, not that the disease-germs of enteric fever ever originate *de novo*, but that among other species of bacilli they are present wherever decomposition of animal

^a Dr. Karl Huber. Ueber Fleischvergiftungen mit specieller Berücksichtigung der Typhus Epidemie von Kloten. Deutsches Archiv f. klin. Med. Vol. XXV., p. 220. 1880.

or vegetable matter takes place. That in ordinary putrefaction not only one but various specifically different kinds of microzymes occur is a fact which has been clearly demonstrated by Koch,^a who, by infecting house-mice with putrid blood, found one kind of bacillus multiplying in their blood and causing septicæmia, whilst in field-mice another kind only caused local inflammation, and the former never became developed at all. Now, leaving aside the possibility, maintained by Naegeli, of one species of bacillus taking on, under various external conditions, different forms and actions, being, as it were, transformed into another, it might be assumed that just as the germs of these specifically different microzymes of Koch are always present wherever putrefaction occurs, so also those, as yet unknown, germs which cause enteric fever might be widely diffused, but special external circumstances—such as a certain quality of soil and fluctuations of its moisture, the presence of faecal matter in decomposition, &c.—would be needed to give rise to their development in sufficient quantity to cause enteric fever in those by whom they are ingested with food or air.

Having regard to the views which are opened by such considerations, it will in future be an important task to find out and more clearly define the relations which may possibly exist between enteric fever and cases of meat—perhaps also of milk—poisoning by still more carefully studying both the clinical and pathological appearances, and by closely searching the ætiology in such epidemics. It is not impossible that what we now cannot but diagnose as "enteric fever" may yet include several distinct diseases—a view which has also been hinted at by Dr. Grimshaw and by Dr. Cameron. Until these doubtful cases can be more clearly distinguished, I think that having regard to the presence of an enlargement of the spleen, and its significance as a sign of the infectious nature of the disease, we cannot help looking upon such a case as one very likely of enteric fever, and that it will in every respect be the safest plan not only to treat it as such—a point on which much stress has also been laid by Dr. Grimshaw^b—but to carefully search its ætiology, and to do whatever is necessary to prevent its spreading.

^a Untersuchungen über die Ätiologie der Wundinfectionen Krankheiten. Leipzig:
F. C. W. Vogel. 1878.

^b Dublin Journal of Medical Science. Feb., 1877.

ART. XIV.—*On Recurrent Vesicular Disease of the Hands—i.e., on the Skin Affections described as Cheiro-pompholyx (Hutchinson), Dysidrosis (Tilbury Fox), Pompholyx (A. Robinson).* By WALTER G. SMITH, M.D., Dubl.; Vice-President of the King and Queen's College of Physicians, Ireland; Physician and Pathologist to the Adelaide Hospital, and Physician in charge of the department for Diseases of the Skin.

THE existence of an independent vesicular malady affecting the hands chiefly, and one not to be confounded with any form of eczema or pemphigus has, I think, been made clear within the last few years by the writings of Mr. Hutchinson and the late Dr. Tilbury Fox. Dermatologists are now agreed that it is by no means a rare affection. It is easier to raise objections to each of the names of the disease at the head of this paper than to suggest a better title, and from a perusal of the controversy on the subject in *The British Medical Journal* for 1876, 1877, and 1878, and of the subsequent literature, it appears to me that dysidrosis and cheiro-pompholyx cannot be considered as equivalent terms, or, in other words, that the descriptions of Dr. Tilbury Fox ("Skin Diseases," 3rd edition) and of Mr. Hutchinson ("Illustrations of Clinical Surgery," X.) embrace at least two different forms of eruption. Dr. R. Liveing also holds that the affection known as dysidrosis should be distinguished from cheiro-pompholyx, and in Dr. L. Bulkley's classification of diseases of the skin I find that dysidrosis is placed among diseases of the sweat glands, and pompholyx (cheiro-pompholyx) under bullous exudative affections.

In illustration of this curious affection I desire to contribute the notes of some cases which have come under my observation.

Dr. W. B., the subject of the first case, has been intimately known to me for some years, and consulted me on several previous occasions, and again during the past autumn, when in trouble with his tormentor. He obligingly furnished me with a detailed narrative which I have his permission to use, and being a physician himself he naturally observed the phenomena with particular interest. The narrative gives such a graphic picture of his case that I reproduce it here almost *verbatim*, together with his comments upon it:—

CASE I.—About ten years ago, in one of the summer months, when at school, and about sixteen years old, I began to feel an intensely itchy sensation between my fingers, soon accompanied by a sense of tingling,

with a great desire to scratch the affected parts, on doing which these unpleasant sensations became intensified. At the commencement of the attack, as well as I can remember, there was nothing abnormal to be seen, save, perhaps, a slight mottling. The sensations of tingling and itchiness increased in severity quickly, and were accompanied with a feeling of great heat or burning in any part where pressure, even slight, was applied, as after pulling on an elastic boot or tying a cord. In a day or so there appeared very minute pearly spots, deeply seated in the skin; these appeared between and over the fingers, on the palmar surface of the fingers, and on the palms of the hands, and a few over the back of the hands; there were a few on the wrists also, these appeared later, but there was no sense of tingling, or extension of the eruption up the arms. As the spots appeared, the tingling became almost unendurable. I had a great inclination, almost irresistible, to clap the hands together, and scratch and rub them, followed, if I yielded to it, by a great increase in the tingling, itchiness, and sense of heat. In a few days the spots increased in size, and were many of them from one to one and a half lines in diameter, and for all the world like small grains of sago, having a clear periphery and dark central spot. Those on the sides and back of the fingers and on the back of the hands were distinctly raised, had a firm granular feel, and were in some places huddled together in clusters, while those on the palms of the hands and palmar surface of the fingers were scarcely, if at all, raised, being deeply set in the skin. I cannot well describe how annoying and tormenting the tingling and itchiness of my hands were, especially the palms of the hands. As long as I kept my hands quiet, held my fingers apart to prevent the rubbing of the elevations on each other, the sensations, though distressing, were endurable; but if I used my hands at all, or applied pressure to any part of them, the parts pressed upon became the seat of intolerable itching and tingling. Indeed it required a considerable amount of self-control to refrain from stamping on the ground, or doing some such apparently foolish and passionate act. I managed by strenuous efforts of self-restraint to carry on my ordinary school work, but I remember well that I could not keep my attention fixed on anything for any length of time without being interrupted by great tingling. Many a time I was forced to yield to the desire to scratch and rub my hands together, with invariably the same result, which was to make my hands a hundred times worse. I showed the eruption to a doctor in Dungannon, who examined it, but neither said nor prescribed anything. So in my torment I seized on any suggestion I could get, and acting on the advice of an old sergeant, I rubbed my hands as hard as I could with oaten meal, the result of which was to break a few of the vesicles, out of which a clear fluid escaped, and, I need hardly say, to aggravate the symptoms greatly. This attack lasted fully a fortnight, and ended by the eruption drying up

(my hands never being moist), and the cuticle coming off in small scales. My hands were rather red for a short while afterwards. While the attack lasted I felt rather depressed and nervous, but in other respects I think I was pretty well. I do not remember whether I had been taking much exercise, or doing much to cause me to perspire for some days before the attack commenced. I may have played hand-ball occasionally, or cricket, but I know that I stayed in the school-room reading every day much longer than was consistent with a healthy, vigorous state of the system. Since this first attack I have suffered nearly every summer from a similar one, but I have never suffered quite so severely. Indeed I have only had three very severe attacks—the first one, which I have described above, an attack in the summer of the year 1874, and this last one, from which I have only just recovered. I do not remember any particulars about the attacks between the first one and the one in the summer of 1874. All I remember is that they commenced in precisely the same way as the first one, but ran a milder course. While the attacks lasted they were exceedingly tormenting.

The attack in the summer of 1874 occurred while I was at Renoyle, in Connemara, a place by the seashore. I think it was towards the end of the month of July, during hot weather. The attack was not quite so severe as the first, but certainly was not far behind it—there was the same premonitory itching and tingling, the same kind of eruption, and the same mode of decline; fully ten days I suffered from it.

Since 1874 I have had a return of the eruption nearly every summer; one or two summers may have passed without it. In the summer of either 1875 or 1876 I had an attack which was extremely tormenting for a few days.

In the summer of 1877 (I think that was the year), when I was at Ballycastle, near the sea, the attack commenced during hot weather, preceded as usual by itching and tingling; but in a day or so the weather completely changed, and rather cold rainy weather set in, when the eruption, which had only just begun to come out, disappeared, and along with it the unpleasant sensations. A couple of weeks afterwards, when the weather again was hot, there was a threatening of the attack, but it did not develop itself or last for any length of time. This was the only occasion, with the exception of the attack this year (1880), on which there was a second appearance of the affection the same year; but, as I have said, in neither case that year did the attack come to anything.

In the year 1878, when I was residing in the Adelaide Hospital during the summer, there was not, as well as I can remember, any appearance of the eruption or annoyance; there may, perhaps, have been a threatened attack, but it cannot have come to anything, otherwise I should certainly have remembered it. Indeed the summer was a rather

hot one, but I spent most of my time in the hospital, and did not take much exercise or do anything to heat myself. Perhaps this may have had something to say to my not having an attack that summer. Last summer (1879) I had for a day or two a feeling of itchiness between my fingers, such as I knew from experience was characteristic of the affection, but fortunately it came to nothing. The summer was unusually cold and wet.

The last attack which I have had, and from which my hands have lately recovered, has been very severe, but the distressing symptoms did not last so long as they did in the two other very severe attacks I have had. On this occasion, as occurred only once before, there was a recurrence of the affection the same year.

The attack this year commenced on Friday, July 28rd. On the morning of that day, about 10 o'clock, as I was engaged syringing an ear, I felt a feeling of itchiness between the middle and ring fingers of my left hand. I knew well what that meant. The sensation was felt soon between other fingers, and also on the right hand, and was attended with slight tingling. When I felt the itchiness first there was positively nothing abnormal to be seen. During the first day I was not much tormented, as the itchiness and tingling were only slight, but the prospect of several days of torment was rather distressing.

On Saturday morning, July 24th, the itchiness and tingling were very annoying. There was now a distinct mottling visible between the fingers and on the palms of the hands, especially after taking the hands out of cold water, when they became almost immediately very hot. All that day my hands were very uncomfortable. I tried at night, before going to bed, an application of equal parts of liquor atropæ and dilute hydrocyanic acid, covered over with flexible collodion, but without any benefit.

On Sunday, July 25th, a few small deeply-seated spots were to be seen in the skin between the fingers. The itchiness and tingling now were very distressing, especially between the fingers and on the palms of the hands, on which latter place there was as yet nothing to be seen except the mottling. I felt a great desire to clap my hands together, and rub and scratch them, but I knew by experience that that would make matters worse; and when I did so I found, as on former occasions, the tingling and itchiness greatly aggravated. Plunging my hands into cold water was the only thing that gave relief, which continued as long as I kept them in the water; but on taking them out, in a few seconds they became burningly hot, and then the tingling returned with all its severity. I spent a rather wretched day of it on Sunday, as my hands were extremely uncomfortable. I kept my fingers apart from each other as much as possible to avoid the rubbing of one on the other, and laid my hands on any cold surface I came across to try and relieve the

tingling somewhat. I avoided doing anything which would cause pressure on any part of my hands; and when I had to use my hands for anything, tried to do it as much as possible with the tips of my fingers, which were the only parts of my hands unaffected. The act of shaking hands was annoying, and the few times I had to do it I did it as mildly as possible. I tried the local application of glycerin and water on Sunday, and thought it was of some value in allaying the irritability, but since I gave it up I found that it cannot have made much difference. On Sunday night I did not sleep well, waking several times. Before going to bed I applied equal parts of liquor atropiæ and dilute hydrocyanic acid as before, covered over with collodion, but without any benefit. In the middle of the night the tingling was so very tormenting that I got up and bathed my hands in cold water, which gave temporary ease.

On Monday, July 26th, the eruption was pretty well out, there being between and on the dorsal surface of the fingers small elevations like minute sago grains, dark in centre and with clear periphery, and distinctly raised. A few were to be seen also on the palms of the hands; these were deeply set in the skin and not raised. The tormenting sensations of itching and tingling were greatly increased. Indeed since Sunday I found myself very much disinclined to get up in the morning, as I did not at all like the thoughts of having to use my hands in dressing. I often felt a shudder run through me when the itching and tingling were very great. As before, I laid my hands on any cold surface I came across, keeping my fingers well apart to prevent the rubbing of the vesicles, now distinctly raised, on each other. I kept my hands extended for the same reason, as if I attempted to close them the skin was thrown into folds, and so the vesicles made to press on each other. By Dr. Walter Smith's advice I began to take liquor arsenicalis and bromide of potassium, $6\frac{1}{2}$ minim doses of the former and 5 grain doses of the latter, to be taken for the first twenty-four hours three times, and then to be continued twice a day. The first dose I took at six o'clock p.m. on Monday. On Monday night I slept rather badly.

On Tuesday morning, July 27th, I awoke with a throbbing headache of the vertex and a feeling of nausea. I vomited twice. I was obliged to lie down all the morning. The headache passed off after some sleep. My hands did not annoy me much on Tuesday until the afternoon, but in the afternoon the tingling became almost unendurable. I went to bed at eight o'clock p.m. in order that I might have nothing to do which would rub or press on my hands. The eruption was now well out, and the condition of my hands in the evening of this day (Tuesday) was as follows:—*Left hand.*—Minute vesicles along radial side of little finger; most numerous opposite the two distal phalanges; a few over the dorsal surface of that finger. These vesicles have not as yet got the dark spot

in their centre, so do not look as like sago-grains as the vesicles on some of the other fingers; the surface has a glossy look and a granular feel. The palmar surface of the little finger is not much affected, but feels a little itchy. The ring finger is well covered over with vesicles; dorsal surface of proximal phalanx least affected. The middle finger is well covered over, the largest vesicles being on the radial side; the surface has a rough granular feel and somewhat glossy appearance; the dorsal surface of proximal phalanx is least affected. The ulnar surface of the index finger is covered with vesicles, but on the radial surface there are only a few here and there. The thumb is pretty well covered. The back of the hand, between thumb and index finger, is covered with very minute vesicles. A few vesicles are to be seen here and there on the rest of the dorsal surface of the hand. There are a few deeply-set vesicles in the palm of the hand, only very slightly raised. The wrist is affected for about one inch and a half up. *Right hand.*—The palmar surface of thumb is little affected; the rest of the thumb is well covered with vesicles. The radial surface of index finger is little affected; a few vesicles on proximal phalanx; the ulnar surface is pretty well covered, as also the rest of the fingers. Wrist affected an inch and a half up. Back of hand between thumb and index finger covered with vesicles. The largest vesicles are on the middle fingers, and are about one and a half lines in diameter. The vesicles have a rounded top and contain a clear fluid. On Tuesday night I slept well.

On Wednesday morning, July 28th, itchiness and tingling were less annoying than on the previous day, being felt chiefly on anterior surface of wrists, on which there are small raised spots extending about one and a half inches up, and upon the dorsal surface of the thumbs. Itchiness between the fingers very slight. The vesicles between the fingers have coalesced in several places, so as to form small bullæ from about two to two and a half lines in diameter; the contents of the older vesicles are drying, and there is an almost fibrous feel on passing the finger over them. On puncturing some of the vessels no fluid escaped, the contents having dried up; the fluid obtained by puncturing others is clear, and markedly alkaline in reaction. In the afternoon of this day (Wednesday) the itching and tingling were very much less. I could do my work with comfort, and felt a great relief after the torment of the previous few days. In the evening, slight itchiness merely, on the radial and anterior surfaces of wrists and the radial surface of thumbs.

On Thursday morning, July 29th, some itchiness on anterior surface of wrists, along dorsal and radial surfaces of thumbs, and in one or two other places, but very slight compared with what it was before, and not accompanied by tingling. The vesicles are drying up. The condition of the hands this morning is as follows:—*Left hand.*—Eruption drying, the vesicles beginning to wither, but still some clear fluid, alkaline in

reaction, exudes from some of them when they are punctured. Some of the vesicles have coalesced so as to form irregular-shaped elevations containing fluid. On the dorsal surface of the thumb the vesicles look the freshest, as here they were latest in making their appearance, and they have a distinct sago-grain-like character. They are closely set together, some of them in pairs. Still considerable irritation is caused by passing the finger along the dorsal surface of thumb; but touching the other fingers, where the eruption has begun to wither, causes scarcely any itchiness. Several deeply-set sago-grain-like vesicles, slightly raised above the surface, are to be seen on the palm of the hand; these are still the seat of much itching, especially when rubbed. *Right hand*.—In a condition very similar to that of left. Eruption is freshest on dorsum of thumb, and here there is considerable irritability; itchiness, too, in the palms of hand and wrist. The tingling having ceased, and the itchiness being much less than before, I feel my hands now in comparative comfort. Slight desquamation commenced in the afternoon on radial side of middle finger and ulnar side of forefinger of both hands in the form of very small scales.

On Friday morning, July 30th, scarcely any itchiness. I was able to dress with comfort. Eruption rapidly drying; some desquamation. *Left hand*.—Whitish powdery scales to be seen in angle between little and ring fingers, along radial side of middle finger, ulnar surface of forefinger, and on palm of hand. On the dorsal surface of the distal phalanx of the thumb the freshest vesicles are to be seen, and rubbing this part causes itchiness. *Right hand*.—Desquamation between fingers in form of minute scales; vesicles on the thumb are drying rapidly, and flattening down; some scales on palm of hand; still some itchiness.

On Saturday, July 31st, desquamation along sides of fingers; scarcely any itchiness.

Sunday, August 1st.—Eruption has quite dried up; desquamation going on; small scales to be seen along sides and palmar surface of fingers; scales most abundant on middle fingers, as here the vesicles were largest and most numerous; skin feels thick, and there is a slight feeling of dulled sensibility; no itching.

Monday, August 2nd.—Hands present a normal appearance; some small scales to be seen here and there—the greatest number on the palmar surface of the middle fingers. The palms of the hands are a little itchy. I have taken already 98 minimis of liquor arsenicalis and a considerable quantity of bromide of potassium, since Monday, July 26th. In the evening of this day (August 2nd) I felt a considerable amount of itchiness on the sides and dorsal surface of my toes, very much resembling that I felt on my hands when they were affected this last time. Scratching increased the itchiness. Nothing abnormal, however, was to be seen on the toes.

Thursday, August 5th.—No irritability of the hands; cuticle peeling off from the middle fingers and inner sides of forefingers; very little desquamation elsewhere; no itchiness of toes.

Friday, August 6th.—No itchiness; scarcely any desquamation except from middle fingers; still much dried cuticle on palmar surface of left middle finger; the outline of the vesicles is still visible here, there being small adherent round scales with dark dots in centre; no itchiness of toes.

August 14th.—Desquamation still going on here and there over the hands, dry scales being present on palms of hands, radial surface of left little finger, ulnar and palmar surface of left ring finger, a few scales on right ring finger, and a very few scales on palmar surface of middle fingers; a few scales on palmar surface of two distal phalanges of left forefinger, along radial surface of left thumb, and in angle between right thumb and forefinger. This morning itchy sensation felt between fingers and on palms of hands, characteristic of the commencement of a fresh attack; towards noon the itchiness increased. It has been very hot weather for the last week. I have played lawn-tennis a few times lately, and so have heated myself greatly. I played tennis this afternoon; my hands did not feel uncomfortable while playing, but on washing my hands in hot water afterwards, my hands began to tingle greatly. Hot water always made my hands tingle while I was suffering from this affection. Hands and wrists were very hot and itchy all evening; nothing abnormal to be seen. I took 7 minims liquor arsenicalis and 10 grains potassium bromide in the evening, and slept well the night following.

Sunday, August 15th.—I had a wretched, miserable day of it; itching and tingling very distressing. The only thing that gave relief was keeping the hands in cold water, but on taking the hands out of the water they got burningly hot immediately, and the tingling and itchiness returned. Nothing to be seen except mottling (white and red), especially immediately after taking hands out of cold water. I felt good for nothing all day. I took in the morning 7 minims liquor arsenicalis and 10 grains potassium bromide; afternoon, 6 minims liquor arsenicalis and 8 grains potassium bromide; evening, $6\frac{1}{2}$ minims liquor arsenicalis and 10 grains potassium bromide. I wrapped my hands in lint wet with lotio plumbi, with a little acetic acid added. In the morning of this day (August 15th) the hands were not so irritable as they were later on in the day; they felt stiff, and closing the hands developed much heat. Radial surface of forearms, especially right, very itchy this morning; a roseolar rash on radial and anterior surface of forearm.

August 17th.—Considerable itchiness this morning, but not so great as before; not much to be seen. *Left hand*.—Irregular-shaped elevations along ulnar surface of forefinger, having more the appearance the eruption usually presents in the later stage, when the vesicles have run into each

other and partially dried. The elevations contain some fluid, alkaline in reaction; similar elevations on middle finger, and along radial side of proximal phalanx of ring finger. *Right hand*.—On ulnar surface of distal phalanx of thumb, small elevations like minute sago-grains; ulnar surface of proximal phalanx of forefinger, as on left hand. On palms of hands nothing to be seen except desquamating epidermis following the first attack.

August 19th.—Not much itchiness, but still some; less than on yesterday. *Left hand*.—Thumb: Sago-grain-like elevations, small and few, on radial surface, and on dorsal surface of distal phalanx; a considerable number of small elevations on ulnar surface of distal phalanx. Index finger: Only two or three on radial surface of proximal phalanx; a few minute elevations on dorsal surface; most numerous on dorsal surface of distal phalanx; several elevations on ulnar surface of proximal phalanx. Middle finger: A clump of about sixteen on radial surface of proximal phalanx; a few elevations on dorsal surface of distal phalanx; scarcely any elevations to be seen elsewhere. Ring finger: On radial surface, no elevations to be seen; on dorsal surface, a few elevations on distal phalanx; on ulnar surface, none visible; on palmar surface, none visible. Little finger: On radial surface, no eruption visible; on dorsal surface, a few elevations on distal phalanx; on ulnar and palmar surface, no eruption visible. Palm of hand: A few minute deeply-set vesicles to be seen; some desquamation still (from first attack). Dorsum of hand, nothing to be seen. *Right hand*.—Thumb: A considerable number of elevations on radial surface, making surface feel rough; a few on dorsal surface of distal phalanx; a considerable number on ulnar surface; a few on palmar surface of proximal phalanx. Index finger: On radial surface, a few elevations at root of finger on proximal phalanx; on dorsal surface, a few on two distal phalanges; on ulnar surface, a group of vesicles, dryish-looking, on proximal phalanx. Middle finger: On radial surface, a few on proximal phalanx; on dorsal surface, a few on distal phalanx; on ulnar and palmar surface, scarcely any to be seen. Ring finger: Radial surface, no vesicles to be seen; dorsal surface, one or two here and there; ulnar surface, a few on middle phalanx; palmar surface, none visible. Little finger: Radial surface, one or two elevations to be seen; dorsal surface, a few on two distal phalanges; ulnar and palmar surface, none visible. Palm of hand, some desquamation (from first attack). Dorsum of hand, nothing to be seen; on wrists, nothing to be seen. The fingers, generally, have a faintly granular look. I have taken now, since Sunday, August 15th, 50 minims liquor arsenicalis and 80 grains bromide of potassium.

August 22nd.—There is still some feeling of itchiness, especially when any pressure is made on hands, as when drying my hands with a towel, but the itchiness is only slight and is quite bearable. Nothing to be

seen except a few small desquamating scales here and there. I took 6 minimis liquor arsenicalis and 10 grains bromide of potassium yesterday morning.

August 27th.—I have been taking 6 minimis liquor arsenicalis with a few grains of bromide of potassium every second morning for last few days. My hands were nearly all right the last few days until this evening, there being only very slight itchiness. This evening the itchiness has rather increased; it is quite bearable, however, not at all tormenting, but there is a decided threatening of a recurrence of the attack.

August 28th.—My hands this morning look all right; some desquamating epidermis merely to be seen on palmar and lateral surface of middle fingers and ulnar surface of forefingers. I took this evening 6 minimis liq. arsenicalis and 10 grains potassium bromide. The weather has been very hot the last few days, and I have been playing lawn-tennis.

September 5th (Sunday).—My hands have not been really quite comfortable since the attack commenced on July 23rd. There has been all along a feeling of itchiness, but for the last week or so I have not had much actual annoyance. Impressions made on the fingers and hands, as by a towel when drying them, remain longer than normal, and the act creates an unpleasant itchy sensation. To-day my hands have been more uncomfortable than they have been for some time; much heat, itching, and tingling; they appear red and mottled; no sago-grain eruption. Between the fingers the itchiness is most troublesome. I took 6 minimis liquor arsenicalis last night, none to-day.

September 18th.—I have felt my hands quite well since the 14th September; no itchiness whatsoever. Since the 14th I have been in England in a country place, and have taken a good deal of exercise, playing lawn-tennis. The weather has not been very warm.

September 19th (Sunday).—I came back to Dublin to-day. This evening some feeling of itchiness between my fingers, but only slight.

September 28th.—My hands feel quite well; no itchiness, nor any other abnormal sensation. Once or twice since Sunday, September 19th, I felt my hands itchy, but it was only slight and lasted only for a short while (a couple of hours). I have not taken any medicine since the beginning of the month.

It appears, then, that there was a recurrence of the affection four times this year. The first attack lasted from July 23rd to August 6th, and the symptoms were very distressing for four days, from July 24th to July 27th inclusive. The second attack, in which the most distressing symptoms lasted the first two days, continued from August 14th to August 22nd. The third and fourth time (August 27th and September 5th) there was a mere threatening of a recurrence of the severe symptoms for a few hours in the evening.

To recapitulate, the symptoms and course of the disease are as follows:—Itchiness commencing between the fingers, increased by scratching, and soon accompanied by heat and tingling. Nothing abnormal to be seen for first day or so. The first abnormal appearance is mottling, best seen after taking the hands out of cold water, when they become burningly hot. Soon minute vesicles deeply seated are seen between and over the fingers. These increase in size, becoming raised, and like sago-grains. They are firm, are not easily ruptured, and never burst of themselves. Vesicles very deeply set and but slightly raised appear on palms of hands. A few vesicles appear on back of hands and on wrists. Itchiness, tingling, and heat become now almost unendurable. Pressure on the affected parts aggravates these symptoms, developing excessive heat, and tingling. Nothing relieves except immersion of hands in cold water. There is a feeling of depression and nervousness; also a disinclination for work. The vesicles contain a fluid, alkaline in reaction. Soon vesicles run together and form irregular-shaped small blisse. The contents of the vesicles dry up, and then desquamation follows in small scales. The hands are never moist. When the eruption begins to wither the distressing symptoms abate and soon go away entirely.

The most noteworthy points connected with the disease as it occurred in my case are the following:—1. The recurrent nature of the affection. 2. The extremely tormenting sensations. 3. The peculiar sago-grain-like character of the eruption. 4. The alkaline reaction of the fluid contained in the vesicles. The reaction of the fluid was only tested during the attack this year, but it seems quite fair to conclude that on all the former occasions the fluid was alkaline in reaction, as the symptoms and course of the disease, and also the character of the eruption in former years and this year were identical. 5. The limitation of the affection to the hands and wrists. For one evening this year (August 2nd) I felt a considerable amount of itchiness and heat between my toes of a character exactly similar to the sensations I felt on my hands, but it did not come to anything, and no eruption appeared. It is quite possible it may have been a threatened attack of the same affection, but on no former occasion do I remember having had any annoyance in my feet. 6. The occurrence of the affection only in summer and during hot weather. For (1) the disease never appeared except in summer; (2), the few attacks which were most severe occurred during hot weather; (3), there were two occasions on which it appears that cold weather prevented the development of the disease—(a), In the summer of 1877, when the attack having commenced during hot weather abated on the weather suddenly changing from heat to cold, and reappeared when the weather again became warm; (b), last year, 1879, when there was only a threatening of the attack, the summer being cold and wet. 7. The influence which arsenic seems to have had in cutting short the severe symptoms this year—for the symptoms did not last so long

severe this year as in the two former very severe attacks. And indeed the attack this year at the commencement threatened to be a very smart one, but while arsenic seemed to cut short the severe symptoms, it failed to remove the affection entirely. Indeed this year the symptoms lasted longer than on any former occasion, as my hands were not quite free from itchiness until the middle of September, the attack having commenced on July 23rd. So a question arises—Could it be that while arsenic cuts short the *severe* symptoms, it rather favours the recurrence of the affection? 8. The influence of exercise. Probably on *all* the occasions on which the attack was severe I had been taking a considerable amount of exercise, causing heat of skin and sweating. In 1878, though the summer was hot, I had not an attack. During this summer I took scarcely any exercise.

CASE II.—Mrs. B., aged thirty, was referred to me by Dr. Purefoy in May, 1876. She had been married three years, and had just weaned her second baby. Three years ago she had a slight eruption on the hands similar to that with which she is now affected, and which soon disappeared. Although of a nervous temperament, she possessed a good constitution, and was "never sick" until within the last month, when she felt weakly and lost her appetite. About a month ago the eruption for which she consulted me appeared. It first showed itself on the palm of the left hand at the roots of the first and second fingers, then on the palm of the right hand below ring and little finger, as small, pale, granular vesicles buried beneath the cuticle. The vesicles remained of small size for about three weeks, and were very itchy. After a little, some vesicles appeared on the wrists and backs of the hands, and at the same time they became larger and confluent, while the itchiness subsided; as to size, they varied in diameter from that of small sago grains up to one-fourth of an inch; some were pustular and attained the size of a sixpence. The original patches on the palms had by this time assumed a red colour, and were bordered by a thin papery rim of yellowish-white skin. The nails were unaffected. The patient has not naturally a damp skin, and never perspired immoderately on the hands. The vesicles were very tough walled, mostly of a light amber colour, and rarely became pustular. The contents of the clear vesicles were alkaline, of the pustules acid. The hands exhaled a heavy foetid odour, which she asserts had developed only since the eruption came out. There were no signs of the eruption on the feet, but before the hands were affected some little "watery pimples" came out on the inner side of each foot. These were itchy, but soon disappeared, and have not since returned.

When she again presented herself, a few days later, new vesicles had come out, which resembled drops of pale wax or blisters caused by boiling water, and a persistent foetid odour, like butyric acid, was perceived.

The vesicles extended up to the roots of the nails, along the sides and palmar surfaces of the fingers. Many of them were irregularly confluent, oval, and pyriform, and some had half collapsed without having ruptured. The vesicles came out *suddenly* in the course of the night, preceded by itching. The clear secretion from the young vesicles was viscid, and could be drawn out into short threads; and the red surface left after rupture of the larger bullæ was sticky and slightly oozing, but there was no tendency to bleed or suppurate. The patient had not observed that contact of the fluid with the skin brought out fresh vesicles. Two days later the eruption was drying up, leaving large papery scales, which covered a red dry surface, presenting a somewhat tessellated appearance. Most of the vesicles had shrivelled without rupture, and the foetid odour was less. Over the thenar eminences and across the palmar surface of the digital phalanges there still remained numerous minute yellowish vesicles, and on the ball of the thumb the vesicles were arranged in lines, radiating from the base of the first phalanx. The pruritus was so annoying that she was driven to take a cloth in her hands and grasp it firmly, in order to obtain relief. Her hands became so sore and tender that she was quite unable to use them, and the raw and glazed skin presented large flakes of loose epidermis, unlike what is observed in eczema. The itching continued troublesome for some time, but the condition of the hands gradually improved, and she soon got quite well. At first an application containing subnitrate of bismuth suspended in black wash and carbolic lotion was used; but afterwards she seemed to derive more benefit from the use of linimentum calcis with glycerin of borax.

Four months later I again saw this patient, and learned that on three occasions, at her catamenial periods, some blisters came out on the soles of the feet, terminating by exfoliation, and a few vesicles also appeared on the palms.

CASE III.—The next case was probably a slighter example of the affection just described. Miss M., aged eighteen, a rosy, healthy-looking girl, has for more than a year been subject to an eruption of small blisters on the palms of the hands. The outbreaks occur just before a catamenial period, and are preceded by a sensation of tingling and itching in the parts attacked. When I first saw the patient in May, 1876, the palm of each hand exhibited an irregular cluster of pale greyish vesicles, not extending over the fingers. The vesicles were thick walled, resisted pressure, and contained a limpid alkaline fluid. They felt granular and almost shotty to the touch, and their appearance almost inevitably suggested to those who saw them the comparison to grains of boiled sago. The eruption was accompanied with itching and tingling. It appears regularly a day or two before each menstrual period, and disappears with the cessation of menstruation, the skin desquamating. At the beginning

she suffered from a few blisters on the soles of the feet, but for the past twelve months the eruption has been confined to the palms.

She is positive in the belief that when she pricks one of the vesicles with a needle, as she is wont to do, a new vesicle springs up wherever the escaped fluid has touched the skin. As a local application she was ordered carbolic lotion with oxide of zinc. In the month of July following a slight eruption appeared on the right hand, followed by desquamation; none on the left hand.

In these two last cases it is interesting to note the coincidence of the development of the peculiar vesicular eruption with the catamenial period, as an indication in favour of the constitutional nature of the affection. After due consideration of the arguments for and against the theory that the disease commences in the sweat apparatus, I am unable to satisfy myself that such is the case, and think that it is more desirable at present to record clinical facts than to frame plausible theories.*

ART. XV.—*On some important Therapeutic Effects of Chlorate of Potassium.*^b Part II. By ALEXANDER HARKIN, M.D.; ex-President, Ulster Medical Society; Membre Associé Etranger, Société Française d'Hygiène, Paris, &c.

As chlorate of potassium exerts a salutary influence on all vital phenomena, especially upon the processes of cell growth, nutrition, and secretion, we might naturally expect to find that its administration in an abnormal condition of the conglomerate glands would be followed by evidence of its power; and such is the case, for example, in functional derangement of the salivary and mammary glands.

The first-named may fail in secreting power from congenital

* In The Irish Hospital Gazette, March 1, 1875, Dr. Gerald Yeo published a Case of Peculiar Eruption of the Hands, in the diagnosis of which some difficulty was felt, but which seems to me to belong to the category of cases described in this communication. An eruption, attended with swelling and intolerable itching, appeared suddenly upon the hands of a healthy man aged forty-five. Numerous vesicles studded the backs of the hands and fingers and the right palm. "Where the skin was thin the vesicles were translucent, and gave the surface of both hands a most striking resemblance to boiled tapioca or sago." Many of the vesicles coalesced into bullæ, which rapidly shrivelled, and the entire skin of the hands desquamated. There was no sign of inflammation, and Dr. Yeo remarks that the affection was "certainly not eczema, as it left no characteristic oozing surface."

^b Read before the Ulster Medical Society. July, 1880.

defect as in a class recognised by naturalists as dry-mouthed families, or from the effects of wasting diseases, such as diabetes. They may, on the other hand, from various causes, suffer from an excess of secretion, as in the period of dentition, and its opposite, old age; from sialogogues, such as mercury, pellitory of Spain, and tobacco. The sight and smell of savoury viands have the same effect.

In either case—whether that of ptyalism or its opposite condition—chlorate of potassium, taken internally, restores the balance and regulates the condition. Its primary effect in the healthy state is to stimulate and increase the flow of saliva, many persons being inconvenienced by swollen gums while taking it; and, when required and given in the form of lozenge or solution, it restores the absent or failing secretion. We are all conversant with the controlling power of this remedy in cases of mercurial salivation, but mistake its *modus operandi* when we attribute its action to an antidotal opposition—to mercury, as in the example of opium and belladonna. The salt simply acts as a regulator—in the first instance exalting the physiological power when below par, and in the second by reducing to normal limits the working of the gland when in an excited condition.

This statement may appear, at first sight, contradictory and unreasonable. The exhibition of digitalis in neurotic affections of the heart affords a parallel case—at one time given to restrain excessive energy of the organ, and, again, to increase the effective force of the heart. The mammary gland in the nursing mother is also obnoxious to two opposite conditions—agalacty, or the absence or paucity of secretion, and galactorrhœa, or excessive secretion, and either of these states gives rise to suffering and discontent in the case of the nursing mother; and although no secretion is more readily modified in its physical qualities by the nature of the ingesta, varying as the nature of the food, whether principally animal or vegetable, or more readily affected by purgatives, saline or otherwise, yet there are few remedies which possess the power of increasing the secretion or of controlling its over-production. Chlorate of potassium has the desired efficacy; it will do all that is promised for jaborandi and more, for its use in regulated doses will rarely fail either to elevate or reduce the secretion to the desired standard as required. In the nursing mother it seems that the blood is sent to the breast in larger quantities in a given period, while, at the same time, the exhalant properties of the skin and

kidneys are diminished. Medicines, which in the ordinary state get into the circulation and pass off by the kidneys, are found less plentifully in the urine, and are carried to the mamma, and thus produce in that organ their tonic and stimulating effects. I have, times without number, prescribed this remedy when the milk was insufficient or totally absent, and have been often entreated, a few days after, to allow the nurse to intermit its use, from the painful and bursting feeling of the teeming breasts. The influence of the remedy as a galactogogue appears limited to the first three months of lactation, and there are some constitutions quite uninfluenced by its use. I believe it shows its power more completely in women of the sanguine temperament, the gland enlarging rapidly and secreting freely under its influence in their cases. A collateral advantage always pertaining to it is, that the nursling improves marvellously, as it shares in the benefit of the salt which it imbibes with its mother's milk—no fact having been better established than that medicinal substances, mineral and vegetable, are discoverable by chemical analysis in the mother's milk, and their physiological influence is demonstrated by their effects on the baby. Out of a number, I shall submit an example of the efficacy of the remedy in the opposite states:—

CASE I.—*Agalacty.*—Some years since, Mrs. J., living in Fleetwood-street, had been attended by me in three confinements, each time of a daughter. On the first occasion there was not even an attempt made to secrete milk, and in the two succeeding births the secretion was merely nominal. At length a fourth child, a boy, was born, and the mother had a most intense desire to nurse him, but in vain. After a week I prescribed a mixture composed of an ounce of the chlorate to a pint of water, ordering one-half wineglassful to be given three times daily, with the result that before the expiry of three days, and ere the mixture was exhausted, the baby had to be brought to relieve the over-distended breasts. This child was nursed successfully for several months.

CASE II.—*Galactorrhœa.*—Mrs. B., residing in Donegall-street, was confined of twins in her first labour. She had very large breasts, and after the first week the secretion was so profuse that the twins were unable to relieve her; night and day she was in a perpetual bath, and she often found it necessary three times after retiring to rest to change completely her night-dress. I prescribed the remedy in a similar quantity and dose, and in a few days the secretion was controlled to her full satisfaction.

There is a condition well known to the profession in which ladies complain to their medical adviser of debility and wasting, night perspirations, palpitation and pain in the left side under the mamma, due to prolonged lactation; the mother is unwilling, or unable perhaps through delicacy of the child, to consent to ablactation. In this case, so very often occurring, by the administration of the chlorate combined with the tr. ferri perchlor., she may be enabled to prolong her maternal duties through the restoration of her strength, the increase of the secretion and improvement of its character, and the subsidence of the lateral pain. The influence of the medicine is not limited to the living child, but extends even to the period of intra-uterine existence—as medicines administered to the pregnant female affect undoubtedly the unborn baby. We all know that ergot administered freely to the mother three or four hours previous to birth will often result in the birth of a comatose or asphyxiated baby, quite independent altogether of the effects produced by uterine contraction—the poison acting in this case on the brain and nervous system of the foetus; and saline medicines given to the mother have often been found in the secretions of the child after birth. I have often prescribed the chlorate when the movements of the child in utero were becoming feeble, and with the best results; its efficacy, however, is best established in its power of controlling the tendency to give birth to a succession of still-born children at a premature period—cases quite distinct from those caused by a syphilitic taint. Of such I have had many memorable examples. I will adduce a remarkable one in illustration:—

CASE III.—On 9th January, 1869, I was called to attend Mrs. H. in her first confinement. She was in labour at the eighth month, and soon a male child was born, without trouble, but without life. There were not any signs of syphilitic taint either in the child or the parents. On 30th March, 1870, I was again sent for, when a girl was born prematurely, caused by an accident in the street from a wild bull. When the third pregnancy was somewhat advanced I put the lady on the chlorate of potassium mixture, and at the end of the ninth month a male child, perfectly healthy, was born alive. On December 6th, 1872, another child was born alive at full time, the mother having followed the same *régime* as before. On January 30th, 1874 (the mother still observing my advice), another girl was born at full time alive. On October 29th, 1875, a male child, still-born, came into the world at the eighth month, the mother believing that further medicine was unnecessary, and not

having taken any. Two other children were since born alive at full time under the influence of the drug—one at December 18, 1876, and the other December 28, 1878. They are both alive at present.

It results from this, that whilst the mother followed the advice and took the prescribed remedy, a succession of living births at the full period occurred.

I think we may fairly conclude from this case that the medicine has a great efficacy in the puerperal condition, as from the moment that the medicine was taken the bad habit was arrested, that on its intermission another still-birth occurred prematurely, and that on its readoption no more fatal cases appeared. Were it necessary I could adduce many similar cases. Many years since, besides, the late Sir James Simpson also prescribed chlorate of potassium for this very purpose, on the ground that it made the maternal blood more rich in oxygen, and consequently better fitted to protect the foetus from "placental phthisis." Other eminent gynæcologists have also recommended it; and among the rest, Dr. M'Clintock, of Dublin, in an article published in the *Brit. Med. Jour.*, Oct. 13, 1877, upon "Foetal Therapeutics," has given a number of striking examples of its controlling power in similar cases.

Young children from the first to the sixth year, particularly those sleeping in overcrowded rooms, are subject to frequent attacks at night of screaming, with insensibility, and semi-convulsions, and somnambulism if not watched, and something approaching to the *petit mal*, due to the protracted inhalation of air deficient in oxygen and laden with carbonic acid and other morbid products—a persistence in this habit often leading to tubercle of the brain or lungs. For this condition I have always found the chlorate of potassium a sovereign remedy; and for the true convulsion and epileptic attacks of children it has proved not only curative, but, more important still, a true preventive. For the adult epileptic, although not so useful as the bromide, I have prescribed with great advantage this salt alone and in combination with the bromide.

In affections of the circulatory system, in palpitation of the heart, and in aneurism of the abdominal aorta and other large vessels, when combined with iron, most salutary results have been experienced, for by increasing the plasticity of the blood it would appear that a deposition of fibrin on the inner coat of the vessel takes place and the walls of the heart and coats of the large vessels appear as if strengthened, while the physical signs of the disease decline, and in some cases absolutely disappear. If, according to

Dr. Levinski, want of energy in the cardiac muscle is often due to the want of oxygen in the blood, we can understand how the chlorate of potassium may supply this desideratum and improve the tone of the organ. In *tabes mesenterica* the chlorate has a powerful effect, and in the diarrhoea and dysentery of children, when given by the mouth and by enema, the most satisfactory results have been observed in my own practice, and in that of the Vienna faculty, as published in the Rudolph Hospital Reports for 1869. Finally, in diseases of the skin, which generally are characterised by debility and a dyscrasis of the blood, the salt is a most potent remedy. In erysipelas no one is likely to question its value, particularly if combined with iron. It is equally useful in erythema nodosum, in eczema, in impetigo and purpura, in lupus when of serofulvous origin, in boils and carbuncles, in acne rosacea; and in that ailment so intractable and so troublesome to the fair sex, acne punctata, I have prescribed it with unvarying success. The remedy given internally appears to have a controlling power on the sebaceous glands and follicles, and prevents the usual progress towards suppuration. In acne rosacea the salt seems to combat the enlargement of the blood vessels and congestion of the skin, on which the disease depends. In epithelioma and cancroid affections of the skin and mouth its efficacy as a lotion is generally acknowledged.

TENDINOUS SUTURE IN TRANSVERSE FRACTURES OF THE PATELLA.

In referring to the method of Kocher (*Centralbl. f. Chir.*, No. 20, 1880), which is intended to replace Malgaigne's method of employing a clamp in patellar fractures, Dr. Volkmann (*ibid.*, June 12) takes occasion to give his own manner of treating these accidents. It resembles Kocher's, inasmuch as both gentlemen employ a tendinous suture. But Volkmann believes that it is not necessary to pass the silver wire through the joint, as has been recommended by Kocher. It will suffice, he thinks, to pass a single loop through the tendon of the quadriceps, and another through the ligamentum patellæ, taking care to observe all the necessary anti-septic precautions. The suture is to remain *in situ* until complete union will have occurred. To insure a perfect contact of the fractured surfaces, the joint should be punctured, and any existing fluid or blood withdrawn. This should be done as early as possible, and before the application of the suture.—*New York Med. Record*, August 28, 1880.

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PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

RECENT WORKS ON CLIMATOLOGY.

1. *Traité de Climatologie Médicale.* Par le Dr. H. C. LOMBARD, de Genève. Paris: J. B. Baillière et Fils. Tome III. 1879. 8vo. Pp. 771. Tome IV. 1880. 8vo. Pp. 680.
2. *Climate and Medical Topography of the Himalayan and Sub-Himalayan Districts of British India.* By F. N. MACNAMARA, M.D., F.R.G.S. London: Longmans, Green, & Co. 1880. 8vo. Pp. 542.
3. *The Ocean as a Health-resort.* By WILLIAM S. WILSON, L.R.C.P., Lond.; M.R.C.S.E. London: J. & A. Churchill. 1880. 8vo. Pp. 260.

1. THE first two volumes of Dr. Lombard's exhaustive work on Medical Climatology were briefly noticed in the number of this Journal for November, 1878 (Vol. LXV., page 412). In that review we said that the work promised to be one of the most comprehensive treatises on the subject which had ever been published. A study of the volumes now before us shows that the opinion then expressed has been fully justified.

The whole of Volume III., and a large portion of Volume IV. are occupied with a continuation of the third book, the subject of which is the "Geographical Distribution of Disease." However, under this heading the author does not limit himself to the discussion alone of the prevalence of disease, but gives sketches of the geography, climatology, ethnography, and "demography" of each country or district. By "demography" is understood an account of the extent of the country, the density of the population, &c. As an illustration of his style we may quote the following graphic and amusing description of the Hottentots and the Kaffirs. He writes (Vol. III., page 679):—

"Ceux-là sont les premiers habitants de l'Afrique australe, qu'ils parcouraient avec leurs bœufs et leurs moutons. Leur peau est d'un jaune

sale, leurs cheveux sont laineux, châtais, leurs yeux sont petits, enfoncés, très écartés l'un de l'autre, avec l'angle intérieur arrondi comme chez les Chinois, auxquels les Hottentots ressemblent à plusieurs égards : les pommettes sont très proéminentes, le nez est très aplati, les lèvres grosses, saillantes et renversées, le menton est pointu. Leur taille est plutôt petite que moyenne, surtout chez les femmes, dont les seins se déforment très vite et s'allongent démesurément ; leur ventre devient protubérant avec l'âge et la partie postérieure de leur corps se couvre d'une énorme masse de graisse, comme on peut le voir dans les musées, où on les a nommées les *Vénus Callipyges*. Il est une branche très dégénérée de la race hottentote que l'on désigne sous le nom de 'boschimanne ;' ils ont été refoulés par les colons européens et sont restés jusqu'à présent au plus bas degré de la civilisation ; ils vivent dans les bois, d'où leur vient le nom d'hommes des bois ou 'boschimans ;' ils ont le même aspect que les Hottentots, mais sont d'une laideur repoussante ; leur taille est plus petite, leur visage présente les mêmes caractères de prognathisme, avec leurs petits yeux écartés, leur nez épâté, leurs lèvres saillantes et leur ventre proéminent.

"La seconde race est celles des *Cafres*, qui occupent toutes les régions orientales de l'Afrique australe. Ils diffèrent autant des Hottentots que des nègres ; leur taille est plus élevée, leur visage plus allongé, leur chevelure est laineuse, leurs traits moins prononcés que ceux des autres races africaines, leur nez n'est point épâté et leurs pommettes peu saillantes, les lèvres sont volumineuses, mais le prognathisme n'existe qu'à un moindre degré. C'est une race guerrière, conquérante, énergique et intelligente. C'est aux Cafres que se rattachent les habitants des provinces orientales et la plupart de celles qui habitent les régions situées à l'ouest des monts Stormberg et Drakenberg, c'est-à-dire les Bassoutos, les Béchuanaas et les Zoulous."

The naming of the warlike race of Zulus leads us to refer to Dr. Lombard's description of Afghanistan, another country to which the attention of all Englishmen has of late been so painfully attracted. Of this far-distant land he says :—

"Ce climat est si salubre qu'un médecin anglais qui avait cru y trouver beaucoup de malades à soigner, a dû quitter Kaboul où il n'avait pas d'occupation." —(Vol. IV., page 73).

At the end of the detailed account of the different countries and climates in all parts of the globe, Dr. Lombard sums up the conclusions arrived at respecting the principal diseases or groups of diseases—namely, malaria, the continued fevers, the eruptive fevers, diseases of the digestive organs; diseases of the respiratory organs, heart, and great vessels; diseases of the nervous system,

of the organs of locomotion, of the genito-urinary system, of the skin; scrofula, scurvy, cancer, ergotism, alcoholism, leprosy, epidemic cholera, yellow fever, the plague, Dengue fever, Béribéri, "Aïnhum," Madura foot, and the sleeping sickness (maladie du sommeil) of the West Coast of Africa. The affection described under the name "Aïnhum" is an ulceration of the little toe which reaches the bone and causes it to undergo necrosis. It was until lately believed that this singular malady was confined to the negro race, but Dr. A. Collas declares* that he has met with it among the Hindoos belonging to the Tamil branch.

The last 120 pages or so of the fourth volume embrace Books IV. and V.—the former deals with the pathogenic and prophylactic influence of the different climates upon the various races of mankind, the white, negro, red, and yellow; the latter deals with the therapeutic influences of the different climates. In a section on the Winter Health-Resorts of Great Britain, the author gives the following description of Queenstown:—

"L'on trouve aussi en Irlande une station hivernale sur la côte sud-est: c'est l'île de Cove, située dans la baie de Cork, qui offre des ressources satisfaisantes pour les malades; la moyenne annuelle y est de 10°.86; celle de l'hiver 6°.61, du printemps 9°.70, de l'été 16°.24 et de l'automne 10°.96. Ces chiffres se rapprochent beaucoup de ceux que nous venons de signaler pour les côtes méridionales de l'Angleterre, puisque la moyenne annuelle qui est à Cove de 10°.86 est à peu près celle de Penzance, c'est-à-dire 11°.00. Les quatre saisons diffèrent également très peu dans les localités que nous comparons. La ville de Cove est bâtie sur le versant sud de l'une des deux collines qui s'élèvent au-dessus de la mer; elle est ainsi protégée contre les vents du nord et reçoit en plein les rayons solaires. L'on comprend dès lors comment cette petite île a été choisie pour résidence d'hiver et comment les malades dont l'état réclame une atmosphère douce, humide et peu variable se trouvent bien d'un pareil séjour."

In concluding this notice of Dr. Lombard's undoubtedly great work, we have to express our admiration at the untiring industry and wide research which have been brought to bear on its compilation. Complete as are the four volumes of which the work consists, Dr. Lombard was not satisfied with them, but he has subsequently published an *Atlas of the Geographical Distribution of Disease in relation to Climate*. This *Atlas* consists, we believe, of twenty-five coloured maps with an explanatory text. Its price is

12 francs, and it may be obtained from Messrs. J. B. Baillière & Son, Rue Hautefeuille 19, Paris.

2. Dr. Macnamara's work on "Himalayan India, its Climate and Diseases," has for its principal object the confirmation of the theory which assigns a malarious origin to goitre.

From a very full preface we learn that the author, while engaged in superintending the examination of the water supply of cantonments in Northern India during 1866 and the five following years, had his attention drawn to the subject of goitre by the mention which medical officers conducting the analyses frequently made of the prevalence of the disease (the simple hypertrophic form) in districts in which they were employed. The disease was usually attributed to the presence of a large proportion of lime and magnesia in the drinking water used by the people—a view which seems to be the one most in vogue in India. Dr. Macnamara determined to make a series of analyses of the waters of the goitrous regions of Northern India, with the view of testing the soundness of this opinion. In 1872 Surgeon-General Sir Campbell Brown authorised the issue of a circular to civil medical officers, calling upon them for replies to a set of questions drawn up with a view to eliciting information on the subject, and also directing that samples of water were to be sent to Calcutta for analysis. Having obtained much information in this way, and in reply to other circulars subsequently addressed to civil surgeons and to the authorities connected with all dispensaries and civil hospitals, Dr. Macnamara came to England in 1874, with the intention of preparing a report.

The analyses had shown that the "lime and magnesia" theory of the origin of the disease was not tenable, while the habitat of goitre suggested malaria as its real cause. In consequence of this it became necessary to investigate the medical topography and climate of the goitrous regions. This is, briefly, the *raison d'être* of the present work. An account of the medical topography, climate, and disease distribution of the Himalayan and Sub-Himalayan regions forms indeed the main portion of the work, but the subject of goitre runs through the whole, as if it were a connecting and limiting thread.

In disclaiming any originality for the view that goitre has a malarious origin, Dr. Macnamara incidentally refers to a review of Dr. Zillner's work "On the Malarious Origin of Idiocy and

Goitre in the Neighbourhood of Salzburg,"* in *The British and Foreign Medico-Chirurgical Review* for July, 1861, page 56, and to two letters on "Bronchocele," by Sir Joseph Fayrer, in *The Lancet* for 1874. He believes, however, that the information he has been able to collect affords convincing proof of the soundness of that view, while it quite disproves the theory which attributes the disease to the presence of an unusual proportion of lime or magnesia in the drinking water.

The author thinks that the following conclusions seem to be warranted by the facts set forth in his book:—

"1. That a large portion of the most important diseases of Northern India have a common origin under certain conjoint conditions of soil and climate, which we recognise as generating 'malaria' and 'marsh miasma.'

"2. That not only fevers of various kinds, and visceral enlargements, but such diseases as dysentery, cholera, goitre, elephantiasis, arise under similar conditions, and obey very similar laws, and would probably prove amenable to the same sanitary and preventive measures, could these be carried out.

"3. That, while thus recognising a concurrence of certain physical conditions as essential to the production of these diseases, we cannot regard these conditions themselves as the cause of the diseases, but only as fostering a *materies morbi*, with the nature of which we have no precise acquaintance, but which we conjecture to be some low form of living organism.

"4. That, however similar the germs in these different diseases may be, we must assume a specific difference, inasmuch as (while for the most part prevailing together) we have witnessed a very remarkable limitation of some one disease to a well-defined area to the exclusion of others, the conditions being apparently the same.

"5. The facts which have now been brought together, while thus indicating certain widely ranging influences as the chief factors in the production of a group of diseases, afford no support to the special views which have been entertained at different times as to the influence of certain kinds of water, electrical and other changes in the atmosphere, chill, infection and the like, in the production of some of them, except it be as secondary and subordinate agencies."

The book is very readable, and, what is greater praise, its contents are eminently trustworthy. Never having visited Himalayan India,

* Ueber Idiotie mit besonderer Rücksicht auf das Stadtgebiet Salzburg. Von Dr. F. V. Zillner, M.D., A.D.N. 1857. Jena, 1860.

we say this on the authority of a distinguished military officer of high rank, who spent many years in the districts of which Dr. Macnamara writes, and who has favoured us with comments on many circumstances and places mentioned in the work. When Lord Dalhousie was Viceroy of India, this officer was desired by him to select a site for a sanitarium in the Dhaoladhar range of the Himalayas. He fixed upon the site of the station now called Dalhousie, which was approved by a Committee of which the late Sir Henry Lawrence was President. One very important fact is noted by the same officer—namely, that soil saturated with cholera discharge seems to remain harmless *during the very hot weather*, but the rains bring out its poisonous qualities. Camping grounds occupied by a regiment suffering from cholera are very liable to be visited by an outbreak in the following year. Cholera is almost unknown at Mooltan, in the Punjab, where the annual rainfall is only seven inches, and the summer heats are so excessive and prolonged that the natives say of Mooltan and its heat that “there is only a piece of paper between it and the infernal regions.” The temperature indeed sometimes rises to 120° or upwards *in the shade*. When marching from Lahore to Mooltan in summer, our informant has known the temperature to be 126° in the hospital tents of the 32nd Foot, although the tents were cooled by moistened kuskur grass mats. He suggests that Mooltan is exempt from cholera, owing perhaps to this very dryness and heat of the climate, and in this view we are strongly inclined to agree with him.

The aetiology of pneumonia has attracted a good deal of attention lately both at home and abroad. It is interesting to quote Dr. Macnamara's opinion on this question. He says, speaking of the prevalence of respiratory diseases amongst the men of the regular native army in the Punjab:—

“The most commonly fatal disease of the class is pneumonia, or rather pleuro-pneumonia, and the most fatal period is that from towards the end of December to the end of February. About the cause of the disease there is considerable difference of opinion amongst the medical officers who have reported specially on the subject; but perhaps the best, as it is unquestionably the most generally supported, opinion is that amongst the native troops the disease, though it has frequently an epidemic character in a station or regiment, is not contagious, and that it is due to cold impressing itself upon the men, either through the skin or bronchial tubes, whilst on night duty, or even still more commonly when off duty, owing to the need of sufficiently protective undress clothing.”—Page 360.

In another place, however, Dr. Macnamara mentions that the sappers and miners engaged in constructing a high-level road in the very unhealthy Umlawah valley between Kalsee and the military hill station of Chuckrata, suffered much from fever, and also from *pneumonia*, which Surgeon-Major J. P. Walker, M.D., the medical officer in charge, considered to have a malarious origin.

We might quote many similar interesting observations from the pages of Dr. Macnamara's work. Enough has been said, however, to prove that the book is one which deserves to be studied from beginning to end because of the rich mine of medical and sanitary information stored up in its pages. Not less will the graphic descriptions of the magnificent scenery and natural phenomena of the Himalayas, with which the volume abounds, charm and instruct the reader.

3. From the mountains to the sea! Dr. Macnamara introduced us to the marvellous scenery and strangely varying climates of the sub-tropical range of the Himalayas—the loftiest summits on the surface of the globe. Mr. Wilson, in his "Handbook," describes the wonders of the vast water-plains which, at one and the same time, separate the Continents of the world and are a highway for the nations. Written in excellent English, and with becoming modesty, this "Handbook of Practical Information as to Sea Voyages for the Use of Tourists and Invalids," cannot fail to supply a want often felt and deplored by intending travellers to distant lands. In the fourteen chapters which make up the book details are given as to routes, shipping-lines, outfit, accommodation and food on board ship, occupations and amusements during a long voyage, the climates and types of weather which may be looked for in the different "regions" of the ocean, and the places most adapted for the temporary residence of the seeker after health.

Alluding to the remedial effects of a long sea voyage, especially in well-selected cases of chest disease, the author suggests that the marked and rapid improvement which so generally takes place in the health while at sea, may be attributed to some or all of the following causes:—

1. The entire change of scene, and the enforced rest from customary occupations.
2. The facilities for being constantly in the open air during the greater part of the twenty-four hours.
3. The habitual respiration, when on deck, of air free from those

organic and inorganic impurities, and floating particles of dust and carbon, that are met with in even the purest air on land.

4. The greater equability of temperature at sea.

5. The presence in the air of certain substances, such as saline particles, which may exert a specific beneficial effect upon the lungs and air-passages; also probable differences in the electrical conditions of the atmosphere and in the amount of ozone (Kingzett's "peroxide of hydrogen") in sea-air.

6. The sedative influence exerted on the constitution by a comparatively humid atmosphere combined with a high barometric pressure.

7. The bracing and hardening effect of almost constant sea-breezes, and of the changes of climate experienced in passing through the different "regions" of the ocean.

Incidentally, we are glad to observe that Mr. Wilson discredits the popular error about "equinoctial gales," which, as every practical meteorologist knows, have no existence in fact. Speaking of the date of sailing from England, the author says:—

"Towards the end of September and the beginning of October the 'equinoctial gales' are supposed to prevail round the British coasts, and some may prefer to avoid sailing during the time they are expected. But seafaring men take but little notice of these gales, which are very irregular in their occurrence."—Page 80.

As to the choice of a ship, Mr. Wilson has no hesitation in saying that, for anyone really travelling for health, a sailing vessel is more suitable than a steamer, especially if the invalid suffers from chest delicacy. He writes:—

"Not only are the cabins more roomy and less crowded, but a certain air of quiet and an absence of bustle and hurry usually prevail on board a sailing vessel, which are seldom to be found in a steamer; and although those who are of an impatient disposition may chafe at the delay caused by calms and contrary winds, others regard these hindrances only as an agreeable change, and find them less monotonous than a uniform rate of progress.

"But the most important points of all in favour of a sailing vessel for invalids suffering from chest delicacy are the greater length of time occupied in the voyage, thus allowing the climate of the sea ample scope for its curative effects, and the more gradual transition from cold to hot latitudes, and *vice versa*. In a steamer these transitions are so sudden and abrupt as often to be extremely trying to delicate constitutions; for although those dangers of climate, by their hardening effect on the

system, constitute an important factor in the benefit derived from sea voyages, yet, if made too rapidly, the shock is greater than can be borne by most invalids."—Page 33.

The length to which this review has run forbids a detailed analysis of Mr. Wilson's book. It is right to mention, however, that there are two valuable appendices—one giving particulars of the outfit required for a voyage to Australia, the other containing the names and addresses of some of the principal shipping firms. There is also a chart of the world showing the chief ocean-routes, and illustrating the physical geography of the sea.

With characteristic modesty Mr. Wilson declares his handbook to be intended "for the use of tourists and invalids," as though he disclaimed for it any scientific value. Not a few, however, will regard it as a standard text-book on a subject which has hitherto been too much neglected by writers on both curative and preventive medicine—namely, the Ocean as a Health-resort.

J. W. MOORE, M.D.

The Journal of Anatomy and Physiology. Vol. XIV. Part IV.
July, 1880.

THE current number of this useful serial is scarcely as interesting as some of its predecessors. We are glad to see it opening its pages to papers on Pathology, but we regret that the editors do not seem to see their way to keep up their summaries of anatomical and physiological literature, which in the earlier numbers were such a treasure-house for reference.

Among the papers on Human Anatomy, which are noteworthy, are the following:—Mr. Walsham contributes one on the arrangement of the gastric veins, correcting a wide-spread error in our manuals. Prof. Watson describes the curvatores coccygis muscles which he has found once in nearly 1,000 subjects, which accords with the reviewer's experience, who has seen them twice in 1,300 subjects. They are much more infrequent than the extensores coccygis; and Krause, in his newly-published third volume, is, we think, incorrect (p. 109) in saying that the former are the more frequently to be found. Mr. Anderson describes an ankylosed astragalo-scaphoid bone in the human tarsus, and Prof. Turner has given an anthropological paper on Crania from New Britain and New Ireland.

There are four interesting papers on Physiology and Pathology. Mr. Waller contributes notes on the histology of glomerulonephritis, and granular kidney and its relation to the origin of connective tissue from proliferated epithelium. Mr. Dreschfeld confirms the observations of Vulpian and others on the alterations in the structure of the spinal cord after amputations. Dr. Foulis records some histological researches on the healing of a wound treated antiseptically; and Mr. Newman contributes a report on the effects of anaesthetics on the pulmonary circulation, from which it appears that while chloroform in 75 seconds stops the pulmonary circulation, and requires 600 cubic centimetres of air and 720 seconds to restore it, it requires ten times as much ether and takes 270 seconds to produce the same effect, which is removed by 200 cubic centimetres of air in 180 seconds.

Bibliotheca Therapeutica, or Bibliography of Therapeutics. By E. J. WARING, M.D. Vol. II. London: The New Sydenham Society. 1879.

AFTER some delay, occasioned by the labour requisite in preparing the three copious indexes (extending over 120 pages), Dr. Waring has been enabled to complete his self-imposed task of furnishing a bibliography of therapeutics. An index of diseases, an index of authors, and an index of subjects are supplied, without which indeed the work would be almost useless.

While we cannot but admire the painstaking industry and toilsome care which the learned author has bestowed upon this work, and while recognising its value to literary students, we think that the great body of the subscribers to the New Sydenham Society would prefer to see the funds of the Society in future expended upon works of more general interest and utility.

Radical Mechanics of Animal Locomotion. By W. P. WAINRIGHT, formerly Colonel of the New York Infantry Volunteers. New York: Van Nostrand. 1880. Pp. 294.

THE last ten years have given us numerous and valuable treatises on animal mechanics, notably those of Haughton, Marey, Pettigrew, and H. Meyer. Most of these authors approach the subject with a profound knowledge of anatomy and of mathematics, and consequently their works are valuable contributions to our know-

ledge of a complex and abstruse study. The author of the present work, however, is but slightly acquainted with anatomy, and does not profess to know much of mathematics, and so has produced an original work based on a theory. He believes that in man and all animals motions originate in the spine, which wriggles, snake-like, in two symmetrical and opposite curves, comparable to those of the letter S; these, by their sudden discharge and reversal, constitute a spring. He considers that motion in progression begins in the neck; that the vertebral column is acted upon in motion as an elastic rod fixed at one end, and twisted at the other—progression resulting from the formation and discharge of two alternate counter turns. These he believes to precede the motions of the limbs in order of causality.

The principal object that Colonel Wainright has in view is the laying-down principles for the correct "setting up" of soldiers, horse and foot, and most of the book is taken up with an exposition of the application of the fundamental principle to this end. He considers that "the deformity of right-handedness" is due solely to want of proper use of the left side, and should be counteracted in soldiers. Of this, however, he advances no proof except the "not infrequent occurrence" of ambidextrism, and a mistaken collation of two Scriptural passages in reference to the heredity of left-handedness among the Benjamites, whom he considers all to have been ambidextrous in the face of the plain statement that the famous seven hundred unerring slingers were *itter iad iamin*—i.e., lamed of their right hand.

It certainly is not the experience of observers on this side of the Atlantic that ambidextrism is "not infrequent," as statistics show it to be much rarer than left-handedness. The statement likewise that the spine motions precede and cause the motions of the limbs in progression is likewise assumed as a postulate without proof. It is quite impossible to follow the author's descriptions without diagrams—indeed the reviewer found it necessary to construct these for himself before he could grasp the details of the proposed hypothesis.

In trying to make structure fall in with his theory of function, Colonel Wainright makes many most surprising statements, such as that the leg and arm consist each of five metamorphosed ribs; that the horse's single toe is composed of two combined digits; that the lungs are suspended in the thorax by the two digastric muscles, and that the weight of the lungs thus hung would pull

down the lower jaw were it not for the temporal and other powerful muscles; that air can pass in the chest from the upper left and lower right lobes of the lungs into the lower left and upper right lobes; that the epiglottis is held down by slender muscles to such an extent that the air in the lungs can be condensed by the pressure, &c. These statements, however, to some extent lighten what would otherwise be, to say the least of it, rather heavy reading. We would recommend the Colonel a course of anatomical and physiological study, and the careful perusal of Meyer's "Statik und Mechanik des menschlischen Knochengerüstes" before he brings out a second edition of his book. We would also recommend him to read carefully that section of Major Dwyer's admirable and standard book dealing with horse structure and action as a simple exposition of some points whereon his notions seem not particularly clear.

The Surgeon's Pocket Book; an Essay on the best Treatment of Wounded in War. By SURGEON-MAJOR J. H. PORTER. Second Edition. London: Charles Griffin & Co. Pp. 319.

FOR the benefit of those of our readers who have not had an opportunity of seeing the first edition of this useful little manual, we may say that it was, in the first instance, written to compete for the prize offered by the Empress of Germany for the best essay on the treatment of the wounded in war, and to it the judges awarded a prize. The first portion of the work is devoted to a description of the various means of transporting injured persons; and many ingenious methods of forming extempore stretchers, &c., are described in addition to the regular ambulance arrangements. The author enters fully into the treatment of gunshot fractures; and many forms of temporary and permanent splints, including the various methods of using gypsum, are described.

The only reference to Listerism which the author makes is as follows:—"The antiseptic treatment for the treatment of gunshot wounds has been recommended, but objected to, on account of the difficulty of procuring trained attendants, the time, and want of material." No doubt in advanced dressing stations some of these objections might hold good, but we cannot consider them sufficient to banish Listerism from field and other hospitals, where we might reasonably expect it to attain its greatest achievements.

The appendix contains tables for the classification of patients, &c., and also a useful formulary.

There are 152 illustrations, but many of them are very crude and some are misleading—such as Fig. 118, which is intended to illustrate Guthrie's amputation at the hip-joint, the lines of incision indicated not allowing enough material to cover the face of the stump.

As a whole, however, we feel assured that the manual will prove of great use, not only to the medical officers of the services for whom it was written, but also to those civil practitioners who are stationed in the large mining and manufacturing centres of Great Britain.

We cannot conclude without expressing our deep regret at the lamented and almost sudden death of the author of this work. In the closing days of 1879, Surgeon-Major Porter, who at the time was acting as Deputy Surgeon-General with the division under the command of General Sir Frederick Roberts, in the camp at Sherpur, Cabul, unhappily succumbed to an attack of acute pneumonia. By Deputy Surgeon-General Porter's death the Irish School of Surgery has been deprived of one of its brightest ornaments, while the Army Medical Department has lost a faithful, energetic, and talented officer.

A Handbook of Physical Diagnosis, comprising the Throat, Thorax, and Abdomen. By DR. PAUL GUTTMANN. Translated from the Third German Edition by A. NAPIER, M.D. London : The New Sydenham Society. 1879.

THE New Sydenham Society has done well to put within the reach of their subscribers a work which not only has attained to a third edition in its own language, but has also been translated into Italian, Russian, Spanish, French, and Polish. The book purports to give a concise description of the various methods pursued in the clinical examination of the thoracic and abdominal organs in health and disease, and an estimate of the diagnostic value of the results so obtained. As a systematic and scientific treatise it well repays perusal, although in parts it is somewhat dry reading, and the distinctions between certain physical signs are sometimes too fine-drawn to be of much utility in practice.

After some introductory remarks upon the general points to be investigated in a patient, the examination of the organs of respiration

tion is discussed under the heads of inspection, palpation, and percussion of the chest, auscultation of the lungs, and examination of the sputa. The organs of circulation and the abdominal viscera are dealt with in a similar way, and the book concludes with a good account of laryngoscopy, and of the physical signs of the principal diseases of the larynx.

The acoustics of percussion and auscultation are elaborated with great care, and the precise explanation of the causes of many familiar physical signs will be very acceptable to teachers of clinical medicine, who have hitherto felt the want of an adequate scientific exposition of the principles of physical diagnosis.

Dr. Gee's excellent little volume on "Auscultation and Percussion" may be consulted with advantage in connexion with many of the subjects treated of in Dr. Guttmann's more advanced handbook, the translation of which appears to have been carefully executed by Dr. Napier.

The Spirit of Nature. By H. B. BAIRDON, B.A. London: Churchill. 1880. Pp. 216.

THE author of "Rosalind," "Morning Clouds," &c., is known as a writer of very respectable verse, and in this series of discourses—originally delivered in the rooms of the Pharmaceutical Society of Edinburgh—he brings his poetical talents to bear on one of the great questions of the day, that of Final Causes in Creation. He entitles his chapters "A Series of Interpretative Essays on the History of Matter, from the Atom to the Flower."

The leading thought running through these essays is antagonism to the Materialistic School of Cosmologists, and although it cannot be expected that the end of the great controversy between Theology and Materialism is brought nearer by this work, yet the author, by approaching the subject from its sentimental and poetical aspect, has expressed some pertinent and striking thoughts. The style is easily flowing, rather flowery, and sometimes rising into poetry, and the science, if not profound, is, as far as it goes, fairly accurate. Altogether it is a pleasing exposition of the argument derived from Beauty in favour of a Superintending Mind who "hath made the substance of all beautiful" for that beauty's own sake.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION,

PART III.

HALF-YEARLY REPORTS.

REPORT ON

MIDWIFERY AND DISEASES OF WOMEN.

By ARTHUR VERNON MACAN, B.A., M.B., M.Ch., M.A.O.,
Univ. Dubl.; Fellow and Censor, King and Queen's College
of Physicians in Ireland; Gynæcologist to the City of Dublin
Hospital; ex-Assistant Physician to the Rotunda Lying-in
Hospital; and Lecturer in Obstetrics at the Carmichael College
of Medicine.

PORRO'S OPERATION.

THE Cæsarean operation, followed by excision of the uterus and ovaries, now generally known as Porro's operation, after Dr. Porro, Professor of Obstetrics at the University of Pavia, is the subject of an able paper, by Dr. A. Pinard, in the *Annales de Gynécologie* for Nov., Dec., 1879, and Jan., 1880.

Before passing to the consideration of the operation itself, which Dr. Pinard thinks inaugurates a new era in the history of the Cæsarean section, he gives an interesting historical *résumé* of the indications which have, at different periods, been considered as calling for its performance.

All authors are agreed that, up to the 16th century, the Cæsarean section was performed only after the patient was supposed to be dead; but when a woman died during pregnancy it was not only considered to be indicated, but the medical man was legally bound to perform it. For fear the operation, if performed by mistake on a person not yet quite dead, might be done carelessly, and thus be the immediate cause of death, the Council of Venice passed laws in 1608 and 1721 punishing anyone severely who did not perform it with the same care and with the same precautions as though the woman were still alive. As the object of all these laws was to save the lives of future citizens, it was obviously unnecessary to perform the operation except where the woman died

within two or three months of the end of gestation. However, with the view of administering the rite of baptism to the infant, this limit was gradually extended, till finally it was held to be incumbent on the accoucheur to perform it if more than twenty days had elapsed since the probable time of conception. Now-a-days, of course, no one would think of performing the Cæsarean section on a dead woman, except it was supposed that the child itself was viable. Such, however, is the difficulty of determining the exact moment of death, and so varied and conflicting are the feelings, and often the interests, of the relatives who look on, that whoever performs the operation in countries such as France and England, where it is not required by law, does so at his own peril, and hence the Cæsarean section, performed *post mortem*, may be looked on as abandoned in both these countries. Thus we see the operation has passed through the following phases:—First. It was looked on in the ancient Roman period as indicated and performed for the purpose of extracting a living child, and was, therefore, insisted on by law. This limited its performance to the last few months of pregnancy. Second. In the middle ages, with the view of baptizing the infant, it was looked on as indicated whenever a pregnant woman died, no matter at what period of pregnancy. Third. Since the period of Guillemeau up to the year 1861, it was only performed when the child was looked on as viable. Fourth. Since the year 1861, chiefly from the greater acknowledged difficulty of diagnosing the exact moment of death, the operation has gradually been replaced by artificial delivery through the natural passages.

It is still uncertain by whom the operation was performed for the first time on a living woman—whether by Nufer, a pig-gelder, or by Trauttman, a surgeon, of Wittenberg. Rousset published a work on the subject in 1581, but the cases given are either unauthentic or refer to cases of extra-uterine pregnancy; and the exact indication for the operation had not been formulated down to the end of the 17th century. Condemned most vehemently by such men as Guillemeau, Mauriceau, and Peu, it was not till the second half of the 17th century that, owing to the exertions of Simon, and more especially the writings of Leveret, the operation began to be looked on as not absolutely fatal. Smellie, in his work, declares himself, under certain circumstances, in favour of the operation, as holding out the only possible chance for the safety of mother and child. Soon after his time a formidable rival to the Cæsarean section

appeared in Sigault's operation for the division of the symphysis pubis, which, however, after having caused the greatest excitement, was soon almost entirely abandoned. Hardly was this controversy settled when two other formidable rivals appeared—viz., the induction of abortion and premature labour, and the use of the cephalotribe. From this time the point to be determined was—In what cases should cephalotripsy be performed; and in what cases the Cæsarean section? On this question very different views are put forward by the highest authorities. Thus M. le Professeur Dubois says that, in a case where the pelvis measures only 67 millimetres, where the child is living and viable, the labour commenced, and the membranes either intact or but a short time ruptured, we should certainly perform the Cæsarean section. If the infant be dead, he would perforate. Should, however, the pelvis measure only 54 millimetres, or less, he would perform the Cæsarean section, whether the child were dead or alive. M. le Professeur Pajot, on the other hand, thinks the Cæsarean section should be confined to those cases where the pelvis is so narrow as not to permit the cephalotribe to be passed into the uterus. Prof. Depaul considers an antero-posterior diameter of 40 millimetres an absolute indication for the Cæsarean section. If the antero-posterior diameter be between 40 and 60 millimetres, he would be inclined, if the child were dead, to extract it per vaginam; if living, he would feel justified in performing the Cæsarean section. Tarnier thinks that if the antero-posterior diameter be only 5 centimetres, the dangers and difficulties of extraction are so great that we should hesitate between it and the Cæsarean section. The greater number of German authorities place the limit for the Cæsarean section still higher. Scanzoni at 68 millimetres if child be dead, at 80 millimetres if it be living. Naegele and Grenser place it at 54 millimetres, but quote Michaelis as having perforated successfully when the antero-posterior diameter was only 47 millimetres. Barnes puts the limit as low as 25 millimetres; Playfair at 38 millimetres, and says the fact of the child being alive or dead does not enter into the question at all. The Belgian accoucheurs, MM. Hubert, father and son, consider the operation is indicated when the infant is living, and the antero-posterior diameter less than 70 millimetres; for they cannot think that anyone has the right deliberately to kill a human being, even with the object of avoiding the dangers of the Cæsarean section for the mother.

Hence, with regard to its indications, the Cæsarean section has passed through three different phases—the first reaching from the beginning of the 16th century up to the date of the appearance of the memoirs of Simon. “This period,” says Guéniot, “is characterised more especially by the rarity and want of authenticity of the recorded successes, by the opposition and incredulity which such successes were received by the most celebrated surgeons of that day, and by the sort of prescription of which the operation was the subject.” The second reaches from the middle of the 18th century, the period of Simon and Leveret, up to the introduction of symphysiotomy, and more especially of cephalotripsy and cephalotomy. During this time it was looked on as an operation of necessity in all cases where delivery was impossible, except piecemeal—the use of the instrument for removing the fetus piecemeal being then considered as more dangerous than the Cæsarean section; hence, during this short period the greatest efforts were made, by modifying the operation and the subsequent treatment, to lessen its mortality. The third commences with the Sigaultean operation, or more exactly with the introduction of the operation of cephalotripsy and the induction of premature labour, and reaches up to the present time. If, during this period, the supporters of the Cæsarean section, on the one hand, have seen fit to attack and condemn the operation of embryotomy, they have, at the same time, striven to modify and improve the Cæsarean section, so as to render it less deadly; and, on the other hand, the embryotomists have overlooked nothing which might tend to render extraction of the fetus through a contracted pelvis more easy or safe.

The technique of the operation itself has also undergone many changes and modifications. Thus, the most ancient authorities recommend the incision through the abdominal walls to be made to the left side, with the object of obtaining more room and avoiding the liver. Mauriceau, indeed, recommended the incision to be made in the linea alba, but his advice was not followed till 1778, when Deleurye introduced it as his own idea. Smellie recommends the incision to be made between the umbilicus and the spine of the ischium; Lauverjat, that it should be made transversely; and Stein the Younger, that it should extend obliquely from the horizontal ramus of the pubis on one side to the extremity of the last false rib on the other. Velpeau incised the abdomen at whichever side the uterus was most prominent. All the more modern authorities, however, agree with Mauriceau that the incision should be made

through the linea alba, and the tendency ever since his time has been to shorten its length. For, while he made his incision to correspond to the length of the uterus, Dr. Pinard considers that a length of 13 cm. is ample. All authorities are also agreed that the incision should not be carried to within less than from 5 to 6 cm. of the symphysis pubis. M. Guéniot has made the strange proposition to substitute caustics for cutting instruments for making the opening in the abdominal walls.

As to the incision through the walls of the uterus, all authors, with the exception of Leveret, are agreed that it should be made in the median line in the axis of the uterus. He, however, recommends us to make it almost laterally. Baudelocque made the incision as near as possible to the fundus, to prevent the escape of the lochia into the abdomen, while Barnes warns us to avoid both the fundus and the cervix, as they both cicatrize badly, and the circular fibres of the cervix, if cut, cause the incision to gape. M. Guéniot protests against a long incision as naturally leading to the gaping of the wound, and agrees with Naegele and Grenser that it should not exceed 13·5 cm. If the placental site be met with the vast majority of authorities recommend that the placenta should be detached rather than cut through. All operators have striven to prevent prolapse of the intestines, or the escape of the liq. amnii into the peritoneal sac, and, with the latter object in view, have ruptured the membranes before incising the uterus. But it is only since ovariotomy has been followed by such success that efforts have been made to open the uterus, if possible, outside the abdominal walls.

The practice of closing the uterine wound with sutures was condemned by Leveret, both as useless and injurious, and this view was almost universally accepted down to the year 1870. In 1859, however, Lestocquoy, modifying a suggestion of Pillon, sewed the uterus, before opening it, to the sides of the incision in the abdominal walls. In 1873 Spencer Wells successfully united the uterine walls with a continuous suture, the end of which he passed out through the vagina, and recommended the suture for every case. Harris has collected sixteen cases operated on in the United States within the last eleven years, in ten of which the suture was used. In 1873 Grandesso Silvestri used an elastic ligature and the patient recovered. In a second case, which terminated fatally, the uterine walls were found to be united at the *post mortem* examination. Catgut sutures have also been extensively employed,

but in a great number of cases were found at the *post mortem* to have become loosened or untied. Barnes has proposed a most ingenious but complicated suture, which Dr. Pinard does not think has ever, as yet, been actually put into practice.

The older operators, in order to allow the lochia and discharges to escape, were contented to leave open the lower angle of the abdominal incision; others—as Wigand, Maygrier, Winckel, and Barnes—make provision for draining the uterus, either by a tube, passed per vaginam, or by passing a sort of seton from the abdominal wound through the uterus, and out of the vagina. It was with the same object—viz., of facilitating the escape of the discharges—that some have advised the removal of the placenta per vaginam.

One of the first modifications of the Cæsarean section was the operation now known as *gastro-elytrotomy*, the object of which is to remove the foetus without wounding either the peritoneum or uterine wall, and thus avoid the dangers of peritonitis and haemorrhage. In 1806 Joerg proposed, after opening the peritoneum, then to incise either the vagina or the neck of the uterus, and so extract the child, but it was not till 1821 that the idea occurred to Ritgen to remove the child without wounding either the peritoneum or uterus. In the first case, however, in which he essayed to put his theory into practice he failed, and had to finish by the Cæsarean section. In 1823 Baudelocque, the nephew, published a thesis at Paris, in which, being ignorant of these facts, he claimed the operation as an original idea of his own. It had, however, fallen entirely into disuse until Galliard Thomas, in 1870, read a paper on it before the New York Medical Association. The only point in which he attempted to improve on the original suggestion of Ritgen was by protruding the vaginal wall through the abdominal incision by means of a sound passed through the vulva. Dr. Garrigues, of Brooklyn, with a view to lessen the haemorrhage, proposes the use of the thermo-cautery for making the opening into the vagina. The operation has been performed in America by several eminent surgeons as well as by Dr. G. Thomas, and in England by Eddis and Hime; but there have not yet been sufficient cases to enable us to settle definitely the value of the operation.

In spite of the various modifications the Cæsarean section itself has undergone, and of the undoubted fact that the operation is better done now-a-days than formerly, still, till very recently, the consequent mortality had not diminished, as may be judged from the

fact that there was not a successful case in Paris from the year 1787, till quite recently, though the operation had been performed fully fifty times by the most celebrated surgeons. The chief causes of this want of success, Dr. Pinard thinks, is the frequent occurrence of peritonitis and haemorrhage, the latter being even more frequent since the use of chloroform became general. He thinks that with the antiseptic method, and the operation of Porro, we have it now in our power successfully to combat both of these accidents.

It is now a long time since the idea of removing the uterus after the Cæsarean section was first conceived. Thus, in 1769, Cavallini removed the uterus from pregnant animals, and thought the operation should also be performed on women. Fogliata came to the same conclusion from the results of his own and Geser's experiment on dogs and cats, and in 1876 the experiments of Rein led him to believe that the operation could be successfully performed on women; but, though Michaelis gave his adhesion to the theory, it was not put into practice till 1868, when Storer, of Boston, removed the uterus and ovaries of a woman on whom he had performed the Cæsarean section, on account of a fibrous tumour of the uterus. He had no intention, however, when he began the operation, of removing the uterus, but was driven to do it by the severity of the haemorrhage from the uterine walls. The patient died five days afterwards of septicæmia, and the case attracted so little attention that it was unknown to Dr. Porro when he performed his first operation in May, 1876. This operation was performed under the strictest antiseptic precautions, and the woman left hospital on the fourteenth day. Such a brilliant success soon had imitators, and Dr. Pinard gives 38 cases, many of them at great length, which have been performed since that time. Of these 38 cases 18 recovered and 20 died, but he considers that 5 of these latter should not be included in the statistics, as being performed on complicated cases, either of fibrous tumour (Storer and Tarnier), or osteo-sarcoma (Inzani), convulsions (Hegar), or *in articulo mortis* (Franzolini). In 4 other cases the particulars of the woman's condition at the time of operation are not given, but these he includes in his statistics rather than be open to the charge of partiality towards the operation. Of the 33 cases left, 18, or 54·5 per cent., were successful, and in 15, or 45·5 per cent., the patients died. A very large majority of these cases were operated on in the public maternities of large cities, and Dr. Pinard asks—

"Has the old Cæsarean section ever given anything like the same result?" and answers, unhesitatingly, "No."

How much of this success may be due to the operation itself, and how much to the antiseptic precautions, it is at present impossible to say; but there can be no operation in which the antiseptic method can be more clearly indicated than in that for opening the gravid uterus. At the same time, by removing the uterus itself, we get rid of the great centre of subsequent septic infection.

It is not yet possible to dogmatise as to the best method of operation—to say whether we should incise the uterus *in situ*, extract the infant, and then apply the ligature and remove the uterus; or follow the advice of Rein and Müller, and first draw the uterus out of the abdomen, then tie the vessels of the broad ligaments, or ligature them *en masse*, and last of all incise the uterus, and extract the child. These are questions that only a more extended experience of the operation can settle. For the same reason he refuses to discuss what is the best way of treating the pedicle, or how long the pedicle ought to be; whether it should be fastened into the abdominal wound, or sunk into the abdomen; and how far we should make use of drainage after the operation. When all these questions are settled we may expect to find the operation yield even better results than it does at present.

The most difficult question of all, however, is to settle the indications for the operation. After what has preceded, it will readily be allowed by all that whenever it is right to open the uterus in order to remove a foetus, it is also right to remove the organ itself. The question, therefore, resolves itself into a determination of the indications for opening the uterus itself. In order to consider this he takes three cases—1. Where the pelvis does not admit of the performance of embryotomy. 2. Where it admits of this operation, but measures less than 7 centimetres; and 3. Where it measures 7 centimetres and more. He further thinks that, should the difficulty in delivery be due to a malignant tumour, and the child be alive and viable, we should choose the operation which holds out the best prospect of saving the child. In case No. 1, where embryotomy is impossible, then the operation is one of necessity, and not of choice. This is, according to Prof. Pajot, where the pelvis is too small to permit the introduction of the necessary instruments. 2nd. Where we can perform embryotomy, but the pelvis measures less than 7 centimetres. Under such circumstances two cases may present themselves, according as the child is dead

or living. After reviewing the statistics of embryotomy given by Dr. Eugene Hubert (*De la Transformation du Crâne*), he concludes that if the child be dead, he would perform embryotomy in such cases, except where the woman herself was suffering from osteomalacia, when it would be well, for her sake, to do Porro's operation. Should, however, the child be living, there is a great difference of opinion among the highest authorities; for though embryotomy gives better results in such cases than Porro's operation, the difference is very slight, and when the child is alive and viable we may well hesitate before making our choice. 3rd. If the pelvis measures 7 centimetres and more, we should reject Porro's operation, whether the child be living or dead.

There is still another possible indication, which has been noticed by Alessandrini—viz., rupture of the uterus. For as it has been shown (*Thèse de Paris*, 1871, Jolly Jacques) that opening the abdomen and cleansing the peritoneal cavity gives better results in cases of rupture of the uterus than simple expectant treatment, we may reasonably conclude that the results will be still better after Porro's operation.

In conclusion Dr. Pinard says that though these indications and contra-indications will most certainly be modified in the future, they are those which follow logically from the results which have, up to the present, been obtained by the Cæsarean section, followed by amputation of the uterus and ovaries.

The Porro Modification of the Cæsarean Section in Continental Europe, chronologically and analytically examined; showing the success of the new method, its advance from Italy to other countries, and its diminishing fatality under a better knowledge of the requisites for securing success; the whole statement being prepared with a view to enable our Obstetrical Surgeons to decide whether we should introduce this method into the United States.—A paper with this title was contributed by Dr. Robert P. Harris to *The American Journal of the Medical Sciences* for April of the present year. In reviewing the origin of the operation he gives credit to Dr. Blundell for being the second person who recommended this operation, which was first proposed by Cavallini in 1769. In a paper read before the Medico-Chirurgical Society in 1823, Dr. Blundell writes:—

“When the Cæsarean operation is performed, or when a patient is evidently sinking after rupture of the womb, might not the whole uterus be taken away? . . . Let it be remembered that the wound formed by the extirpation of the womb, and which might probably be much

reduced in extent by drawing the parts together with a ligature, would merely take the place of a more formidable wound—that, I mean, formed in the womb by the Cæsarean section—and which, by the operation here performed, would, together with the uterus, be taken completely out of the body. . . . Experiments on animals—rabbits, for example—which have very large wombs, might be of use here."

He afterwards made such experiments, and, while losing all by the Cæsarean section, he saved three out of four by the method of ligation and ablation. He subsequently repeatedly urged the adoption of this operation on the human female, and it is certainly surprising, when we consider the great mortality of the Cæsarean section in England, that no one ever carried out his suggestion in that country. Dr. Harris has tabulated 36 cases of this operation, which include 2 cases operated on by C. Braun, of Vienna, not mentioned in Dr. Pinard's tables. The fifth case he gives was operated on successfully by Prof. Spaeth, of Vienna, and was the first recovery that had followed Cæsarean section in the whole obstetric practice of Vienna for a century, and naturally created a great deal of excitement. Besides these two cases of Braun's, Dr. Harris has also heard of 5 other cases (Previtali, 2; Lucas Champomniére, 2; Valtorta, 1) not entered in Dr. Pinard's table, but does not include them in his table, as he could not obtain the particulars in time. He says:—

" If we excluded the 6 who evidently died in consequence of diseased conditions existing prior to the operation, we have 30 cases whose fate rested upon the effect of the knife and the skill in the after-treatment, without any special reference to the length of labour; and of these 18, or 60 per cent., recovered. This is the proper way to measure the absolute mortality of the operation in coming to a decision as to its relative merits when contrasted with craniotomy and cephalotripsy. If women are to be operated on in a semi-moribund state in order that their children may be saved alive, it is not exactly fair to set down their cases as evidence of the danger of the operation. Examined in all its details, in different countries, and under different circumstances, I have formed the opinion that the Porro Cæsarean operation, performed under the carbolic spray, and followed by proper drainage and the Lister treatment, will be found successful to the woman in about one-half of all the cases of pelvic deformity requiring its performance that are brought for relief to lying-in hospitals. What it will accomplish in private practice, or in the United States, where but 1 Cæsarean case in 28 has been in hospital, I am not prepared to say."

Compared with the results shown by Dr. Harris' table of Porro's operation, the last 36 Cæsarean operations performed in the United States make but a sad show, with the 7 recoveries and 29 deaths in twelve years. He thinks, however, that the chief cause for the excessive mortality of the Cæsarean section is that it has been performed too late. Hence he concludes "there would be little for us to gain by the Porro method in private practice, if we could induce all midwives and accoucheurs having cases of deformity to call in at once a competent operator, that the Cæsarean section, if requisite, might be performed before the child dies or is sacrificed, and the case rendered more dangerous by prolonged uterine action than it is proved to be in the first few hours of labour." The main objection to Porro's operation is, he thinks, "that it entirely unsexes the woman, not only rendering her barren, but in some degree unfeminine." The number of cases of Cæsarean section does not, he thinks, nearly represent the number of women on whom it ought to be performed, on account of the want of proper assistance, and also because there is a general belief that death will follow the operation:—"What is requisite is a mode of operation which shall offer a fair hope of recovery, and which, in consequence, can be urged upon the patient when she begins to realise the fact that she must die in labour if not relieved. The physician must have faith in the method proposed, and be able to recommend it from its past successes. In countries where the Porro system has been adopted it has had the effect to increase the confidence of the operator, to secure a larger proportion of early operations, and to save alive nearly all of the children."

With regard to the pedicle, he thinks there is little weight in the theoretical objection against forcing the cervix uteri from its natural position and dragging it with the vagina to form an attachment to the abdominal wall above the symphysis pubis. The parts usually soon adapt themselves to their new relations, and Dr. Porro found that the attachment in his case was after some time converted into a long thin pedicle, so that the patient suffered no pain or inconvenience in walking or dancing. Several alternatives have been proposed to avoid this union of the cervix with the abdominal walls, such as—1. Sinking the cervix and ligature into the pelvis, and drainage. 2. The inversion of the uterus after its evacuation, and its removal per vaginam. 3. Opening the vagina close to the cervix, and turning the stump into the passage. All these, he thinks, tend only to render the operation more complicated and dangerous.

The great advantage of Porro's operation is, he thinks, first, that the wound originally within the abdomen is treated virtually without the body; second, that there is no bleeding or gaping uterine wound, no lochial discharge, no escape of fluids into the abdominal cavity from the uterus, and no uterine sinuses to absorb noxious matters, set up phlebitis or metritis. It reduces the proportion of deaths by shock and exhaustion, and almost entirely avoids the risk of secondary haemorrhage. The causes of death are generally traumatic, or septo-traumatic peritonitis, and septicaemia without peritoneal inflammation.

Really to appreciate the results of Porro's operation we must remember that 32 of these were performed in public hospitals, many of which have been regarded as little better than pesthouses. That they have exerted a prejudicial influence on the results of the operation is shown by the fact that the results obtained in them after ovariotomy are much behind those obtained in both England and America.

In *The British Medical Journal* for January of this year is a paper by Dr. F. Barnes, in which he seems to think that the results obtained by Porro's operation are not as good as those which the Cæsarean section has of late years yielded on the Continent. Against his opinion, however, we have that of Drs. Tarnier, Fochier, Pinard, Welponer, Chiara, and Wasseige, who think that Porro's operation is much less fatal. Under most favourable circumstances, such as operating early in private practice, Dr. Harris thinks that the Cæsarean section may on the Continent save about half the patients. In America he thinks if cases were operated on early, as many as 6 or 7 out of 10 might be saved; but he, at the same time, puts the probable proportion of cases that are seen early as 1 in 4 or 5, and asks what is to become of the balance.

Since this paper was published Dr. Isaac G. Taylor, of New York, has introduced a fresh modification into the operation, which he published in *The American Journal of the Medical Sciences* for July, 1880. It consists of first removing the child, and then putting a temporary ligature round the cervix, and afterwards inserting a cobbler-stitch one inch below this for the permanent ligature, then removing the uterus and placenta with the scissors, and sinking the pedicle. The patient was attacked on the 17th day with phlegmasia dolens, and died on the 26th day after the operation with symptoms of embolism.

THE TREATMENT OF RUPTURE OF THE UTERUS.

Dr. Frommel, Assistant to the Gynaecological Clinique at Berlin, lately communicated a case to the *Zeitschrift für Geburtshilfe und Gynaekologie*, where rupture of the uterus was successfully treated by drainage and antiseptic irrigation of the peritoneum. In the *Centralblatt f. Gynaekologie* for August 28th, 1880, he gives at length the histories of two other cases which recovered from the same accident under similar treatment. In the first case the muscular tissue of the uterus was entirely torn through, but the peritoneal covering was intact, though widely separated from the uterus, thus forming a large sac, into which the foetus had escaped. The woman was put under chloroform, the whole sac thoroughly washed out with a two per cent. solution of carbolic acid, and a large drainage tube passed to the bottom of the cavity. The highest temperature the patient had after the operation was 38° C. (100·4° F.), on the evening of the sixth day, when the whole sac was irrigated through the drainage tube. On the 26th day all discharge from the tube ceased, so it was removed on the 28th, and on the 30th the patient left hospital. In the second case the child and placenta had both escaped into the peritoneum. The fundus of the uterus was connected with the cervix by a thin band of uterine tissue. The child was turned and extracted, the placenta removed, and the abdominal cavity washed out with a two per cent. solution of carbolic acid, after which a thick drainage tube was carried up as far as possible into the abdomen, and the external end fastened to the posterior commissure by a single stitch. A firm compress was applied to the abdomen, in order to press the fundus down into the pelvis, and an ice-bag was laid over the fundus. The temperature after the operation only once rose as high as 38·5° C. (101·3° F.), and as often as it exceeded 38° C. (100·4° F.) the abdomen was washed out through the tube under gentle pressure with a two per cent. solution of carbolic acid. For the first few days the patient got opium in order to lessen the peristalsis. The tube was removed on the 17th day, the patient was up on the 19th day, and was discharged from hospital, feeling quite recovered, two days afterwards. When he published his first case he thought that this treatment was not applicable when the child had escaped into the abdomen, and then he recommended laparotomy, but from the second of the cases now published he has learnt that this is not the case, for in it both the child and the placenta had lain in the abdomen for fully six hours.

During the first two days he injects as seldom as possible, in order not to separate the adhesions which have formed; with the same object in view he administers opium. He looks on a temperature of 38° C. (100·4° F.) as an indication for irrigation with a lukewarm two per cent. solution of carbolic acid.

Reben (*Zur Therapie der Uterus Rupture, Dis. Berl.*, 1879) gives three cases where Schroeder removed the child by laparotomy, washed out the abdomen, and united the rupture in the uterine walls with sutures. In all three cases, however, the patient died.—*Centralblatt f. Gynaek.*, No. 22, 1879.

THE MECHANICAL DILATATION OF THE UTERUS.

Fritsch thinks (*Die mechanische Uterus Dilatation, Centralblatt f. Gynaek.*, No. 25, 1879) that where our only object is to dilate the uterus we should entirely abandon such means as the sponge-tent, laminaria, or tupelo, in favour of rapid instrumental dilatation, by which we can so entirely avoid all risk of septic infection. He uses for this purpose graduated steel sounds, seemingly very similar to those proposed by Peaslee in 1870. The thickest is about the size of a thick finger; the smallest is somewhat larger than a thick sound (0·5 mm.). He first introduces one of the smaller sounds to the inner os, and then grasps the uterus externally, and presses the fundus down over the sound. This often requires an amount of force which would be quite unallowable if applied only from within, without the control of the hand externally. The danger of septic infection can certainly be avoided by using frequent injections, and it is much safer than the metrotome. He has made use of the method in multiparae to remove retained portions of an abortion, mucous polypi, and to enable him to use the curette. As to its efficiency in cases of dilatation of the inner os he has no experience.

It is only when we wish to produce artificial infiltration of the uterus that the slow process is indicated. If we wish to strengthen a flabby uterus, to give tone to the circulation, or increase the power of contraction, then we should make use of the laminaria. If we only want to open the way into the uterus, then we should use rapid instrumental dilatation.

This paper has elicited one from Professor C. Schroeder, of Berlin ("Sind die Quellmittel in der gynaekologischen Praxis nothwendig?"—*Centralblatt f. Gynaekologie*, No. 26, 1879), in which he says that he does not think that in private practice he

has made use of the slow method of dilating the uterus for more than one and a half years, and even in hospital it is now only rarely that he does so, and when he finds it necessary he uses the tupelo-tent. Many years ago he procured a set of graduated sounds, such as Fritsch advises, but uses them only very rarely. Nor can he say that he has been led to abandon tents from finding their use too dangerous, for he thinks such accidents as have occurred might be certainly avoided in the future by following Schultz's antiseptic method, which has, however, the disadvantage of most wearily lengthening the whole process. He has, however, been led to abandon them, partly because in many cases where he formerly used dilatation for the purpose of diagnosis or treatment, he can now attain his object by means of the sharp scoop, which can be passed through the undilated os, and part or all of the mucous membrane of the uterus so removed. When, however, he requires to pass the finger into the uterus, he now first incises both sides of the cervix as far as the roof of the vagina on both sides, and then forces the finger into the cavity, either by pushing down the fundus from above, or drawing the cervix over the finger by means of a Museaux' vulsellum. In some cases it is quite surprising how readily this may be done; in difficult cases we will generally rupture some of the fibres of the inner os. These slight ruptures, if not infected, heal readily, and when we have finished our diagnosis or treatment we can close the cut sides of the cervix with sutures.

Though a very large number of cases come annually before him, he has in this way been led almost entirely to give up the use of tents for dilating purposes.

In the number of the same paper for April 24th of this year, Dr. Franck gives an account of the results obtained by using Prof. Schultz's dilator—the essential conditions for its use being that the cervical canal should measure at least 6 mm., and that there is no inflammatory process going on in either the uterus or its appendages. The instrument, after being thoroughly cleansed and disinfected, is passed into the uterus and the branches separated. The amount to which this is possible varies greatly with the condition of the uterine tissue and the varying amount of pain experienced by the patient. The instrument is then withdrawn to see what size the passage is, and before it is again introduced the uterus should be carefully washed out with warm water to prevent infection. With such precautions it is absolutely without danger, and it has the great advantage that it produces the same amount of dilatation

in a few minutes that laminaria tents do in about eight hours. In cases where the woman has not borne a child, or where the cervix has not the diameter of 6 mm., it is necessary to begin with a single laminaria tent. He says the patient after the dilatation must remain lying for at least an hour, but need not necessarily be confined to bed. If the spasmodic pains still continue she should have an opium suppository and warm stupes to the abdomen. He thinks that this dilatation repeated at intervals has a powerful effect in curing subinvolution and flaccidity of the uterus. It also causes the expulsion of portions of retained placenta or membranes, and retroflexions may also be cured thereby, provided there are no adhesions present. Stenosis of the inner, but not of the outer, os will yield to this treatment.

In *The Lancet* for Nov. 1, 1879, Mr. Lawson Tait gives twelve cases in which he dilated the cervix by continuous elastic pressure. He says:—"I have had such unsatisfactory results from all kinds of tents in dilating the cervix uteri that I have long desired to get something which would accomplish this more safely, more speedily, and with less pain. Having been struck by the ease with which an inverted uterus can be returned by continuous elastic pressure, I applied this method for the purpose of dilating the cervix, and my results have been so completely satisfactory that I hasten to narrate my experience of the first twelve cases in which I have used it." The advantages of the plan are that it is absolutely free from smell and septic risks, and almost free from pain. It produces more complete dilatation of the whole canal than that obtained with tents. The dilators are made of vulcanite, and are sold in sets of four sizes to screw into a common stem. "The only precaution necessary in their employment is to use extremely gentle pressure." In this paper Mr. Tait does not, however, enter into any details as to how the continuous elastic pressure is to be applied.

Just as we were going to press we received one of the series of *Volkmann's Clinical Lectures*, by Dr. Leopold Landau, on "The Various Methods of Dilating the Uterus" (*Ueber Erweiterungsmittel der Gebärmutter*), which treats the whole subject in a most exhaustive manner, which we regret greatly we are unable to include in the present Report.

ANTISEPTICS IN CHILDBED.

On Listerism in Gynecology and Midwifery (Frankenhäuser, Zurich. *Correspondenzbl. f. Schweiz. Ärzte*, 1879, No. 14-

Centralblatt f. Gynaek., No. 22, 1879.)—Frankenhäuser thinks that the principal agent in producing infection is impure air. He, therefore, performs all his operations under the spray, and limits the number of students at his ovariotomies to four or five, who take off all unnecessary articles of clothing before coming into the operating room. On the other hand, he looks on the prophylactic intra-uterine injections *post partum* as carrying with them more danger than they avoid. If the hand has to be introduced into the genitals, it is always done under the spray, which is even used when making an ordinary examination, for he thinks it is much easier to prevent the entrance of impure air than to wash away septic material once it is formed.

When reporting Frankenhäuser's paper, Oeri says that for some years back, in Bischof's clinique, the spray is always used when the hand has to be introduced into the uterus, the perinæum to be sewn up, as well as during many gynecological operations. Even during the time, however, when the antiseptic injections alone were made use of, it was usual to find patients recovering after protracted labours, manual removal of the placenta, or decomposition of the ovum, without any feverish symptoms.

In the report of the obstetrical clinique of Prof. Weber Ritter von Ebenhof, in Prague, for the year ending Ap. 30, 1879 (*Centralblatt*, No. 26, 1879), a description is given of the precautions that are taken for avoiding septic infection during labour and the lying-in state. No student is allowed to make any examination who has any sort of sore on the hands, or whose nails are long or dirty. Even after the most thorough washing of the hands the students are obliged, before making an examination, to rinse them first in a two per cent. solution of carbolic acid, and afterwards in a solution of permanganate of potash and weak hydrochloric acid. The finger is then covered with a five per cent. solution of carbolic acid in glycerine. As soon as a new patient is admitted her vagina is washed out with a two per cent. solution of carbolic acid, and the parts about the vulvæ thoroughly washed with soap and carbolic acid solution. If the labour be long delayed after the escape of the waters the vagina is washed out every two hours with carbolic acid solution. In order to prevent the entrance of air into the vagina a wad of cotton steeped in dilute liq. chlori. (1 to 3) is laid before the vulvæ. After the expulsion of the placenta the vagina is washed out by the head midwife with the carbolic acid solution, and if the labour has been

a protracted one, the foetus decomposed, or any operation been undertaken, the assistant himself must wash out the uterus with a three per cent. carbolic acid solution. All fissures of the genitals are closed with carbolised catgut, and ruptured perinea with carbolised silk. If the vagina has been much bruised a wad of cotton wool saturated with camphor is passed into it immediately after the removal of the placenta. In all natural labours the child is born under the hand-spray, and all operations are performed under the steam-spray. The placenta, till removed from the ward, are placed in a solution of carbolic water. All dead children are at once removed, and closets for soiled linen are disinfected with chloride of lime. To prevent infection after labour the vagina is washed out every two or three hours with lukewarm two per cent. carbolic acid solution, which has previously been boiled. If fever is present a carbolic acid decoction of camomile flowers of the same strength is used. All the old tin injection tubes have been replaced with glass ones. In all cases where the passage is injured or there are puerperal ulcers, a wad of cotton is laid before the vulvæ, impregnated with carbolic acid or camphor. The nurses are made to wash their hands in carbolic solution after having in any way come in contact with the genital tract of a lying-in woman. It is of great importance to treat the first indications of fever promptly by injections of three per cent. solution into the uterus, and the administration of purgatives. Nine mothers died out of 925 mothers thus treated, being a mortality of less than one per cent.

Of the Value of Antiseptic Uterine Injections Post Partum ("Ueber den Werth desinficirenden Uterus-auspilungen post Partum," M. Hofmeier, Berlin. *Centralblatt f. Gynaek.*, No. 5, 1880).—Of late years it has been proposed, with a view of lessening the chance of puerperal infection, to wash out the vagina, cervix, and uterus of every lying-in woman with a three per cent. solution of carbolic acid immediately after the child is born. Hofmeier found that of 260 cases treated thus prophylactically by him in the University Lying-in Hospital in Berlin, 16 per cent. were attacked with fever, 8 of them very severely, while of 249 patients not so treated only 8 per cent. got ill, only 1 case being serious. Hence he concludes that such treatment of ordinary cases does more harm than good.

It is very different, however, when we have symptoms of putrefaction or decomposition taking place during labour, accompanied by the formation of gas in the uterus and elevation of temperature

in the patient. Stande found that 57 per cent. of such cases were attacked with fever, and that 50 per cent. died. It is evident, therefore, that we should endeavour to remove and render harmless every particle of decomposing matter, for which purpose it will be necessary to use a tolerably strong solution (at least five per cent.) of carbolic acid. Of 27 such cases, with temperatures reaching above 106° F. and pulses up to 144 that were thus treated *post partum*, 6 only died, or 22 per cent., and 18, or 60 per cent., made an uninterrupted recovery. The wonderful contrast between the threatened danger and the undisturbed convalescence can only be properly appreciated by a perusal of the whole history of such cases which Hofmeier hopes shortly to publish.

On Prophylactic Intra-uterine Injections, Post Partum (Prof. Stadfeldt, of Copenhagen. *Centralblatt f. Gynaekologie*, No. 7, 1880).—Since the year 1870 Stadfeldt has had this treatment carried out in his clinique, each year more thoroughly. By these means the mortality for the years 1870-74 was reduced to 1 in 87, the previous period of 5 years having given a mortality varying from 1 in 37 to 1 in 14. For the period 1875-79 the mortality is still less, 44 patients only out of a total of 5,098 having died of puerperal fever, or 1 death in 116 labours. Not only, however, has the mortality been thus reduced, but also the morbidity. Stadfeldt thinks that these happy results are mainly due to three things—the methodical washing out of the vagina before the birth of the child, the use of the steam-spray during its birth, and intra-uterine anti-septic injection after labour is ended. For four years all children have been born in his clinique under the steam-spray, and he expresses his surprise that this method has not been more widely adopted, as it is simple and without injury to either mother or child. The spray is used from the moment any part of the child appears at the vulva till the placenta has been removed, any ruptures that have taken place in the soft parts have been sewed up, and a wad of prepared oakum (Theerjute), placed before the vulva. He uses a three per cent. solution of carbolic acid in large quantities (often several litres), and has never seen the slightest bad consequence from it. He does not, however, recommend such treatment in every case, but only in those where the hand or instruments have been introduced into the genitals, or pieces of membrane have remained behind in the uterus, or, above all, where any decomposition has taken place in the contents of the uterus. In 12 such cases which have occurred in his clinique within the last 2½ years,

the mortality was only 7 per cent.; or, taking only the 7 cases in which the foetus was itself decomposed, 14 per cent.—a result which anyone who remembers the mortality in such cases but a few years ago cannot but consider most favourable.

Permanent Irrigation of the Vagina, as a means for treating wounds of the female genital organs strictly antiseptically (Dr. Otto Küstner, Jena. *Centralblatt f. Gynaekologie*, No. 16, 1880).—In the last Report on obstetrics mention was made of Schücking's proposal for the permanent irrigation of the uterine cavity. This method has not, however, been very extensively put in practice, which the author of the present paper thinks it would have been if Schücking had taken the trouble to modify and improve it. This he considers he himself has done by passing the tube of his apparatus only as far as the top of the vagina, and then by elevating the woman's hips making the fundus uteri lower than the external genital opening. In this way the whole interior surface of the uterus is kept covered with the antiseptic solution. The advantages he claims for his method over that proposed by Schücking are:—

1. The motion of the uterus is in no way interfered with by the drainage tube in the vagina, as it is by the uterine catheter of Schücking.
2. The thin drainage tube does not distend the vagina, as Schücking's gauze enveloped catheter does, and so tend to keep open the fissures and wounds in the vagina and vulvæ.
3. By using his method there is no objection to moving the patient for the purpose of changing the bedclothes, &c.
4. His method does not require renewing every twenty-four hours, as is almost necessary with Schücking's.
5. For all these reasons it is possible to leave a patient thus treated under the care of unskilled persons, whereas Schücking's method requires the constant supervision of the doctor.

He would apply this method only to cases where there were freely secreting wounds in the genital tract. Simple fissures or wounds that have been sutured he treats with a ten per cent. solution of carbolic acid in glycerine. As fluid for irrigation he uses a five per cent. solution of sulphate of soda; he cannot, however, call this treatment Listerian, though by it the wound is kept constantly bathed in an antiseptic solution. Drainage of the uterus he looks on as a parody of Chassaignac's invention.

THE BOSTON
SOCIETY FOR
MEDICAL
INVESTIGATION

PART IV.

MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF
DUBLIN.

President—E. H. BENNETT, M.D.

Secretary—JOHN WILLIAM MOORE, M.D.

Abnormality of the Great Cardiac Vessels ; Absence of the Superior Vena Cava.—Dr. T. E. LITTLE, in presenting this specimen, said : While engaged in the anatomical demonstration of the thorax of the body from which the present specimen was removed, I met with the remarkably abnormal condition of parts which it displays. It consists of the thoracic viscera of an elderly female. On looking for the superior vena cava, in its ordinary situation, to the right of the ascending aorta, we can discover no trace of its presence as a large pervious vessel. The right auricle, in fact, terminates above, and to the right of the auricular appendix, in a blunt, somewhat conical apex. The whole dimensions of this chamber of the heart appear to be comparatively small. I may mention, at once, that the heart, otherwise—with the exception of its connexions with and relations to the irregularity in question—is normal and healthy ; the inferior vena cava, pulmonary veins, pulmonary artery, aortic arch and its branches are regular. A large abnormal venous trunk, lying vertically to the left side of the pulmonary artery, immediately attracted notice. It is observed to be formed in the following way, and to have the following course and relations :—The two innominate veins, which apparently reverse in this case their usual relative conditions, the right being the longer and more horizontal, unite in front of the termination of the transverse aortic arch, at a position corresponding to the interval between the origins of the left carotid and subclavian arteries, here forming the commencement of the vessel in question—in fact, a superior vena cava of the left side. This vessel, which is of the size of an average normal superior vena cava, passes downwards, lying in front of the arch of aorta, and of the root of left pulmonary artery and left pulmonary veins ; from this it passes to the back of the heart, and, turning to the right, lies

in the posterior auriculo-ventricular groove (where, in fact, it constitutes the enormously dilated coronary sinus), and eventually opens, by a large free orifice, into the right auricle to the left of the inferior caval opening—i.e., at the ordinary site of the orifice of the coronary sinus. This orifice has no valve; nor is there any valve in the course of the vessel itself. It will be observed that, in consequence of this arrangement, there is one less than the ordinary number of openings in this auricle.

A distinct "vestigial fold" of the normal (right) superior vena cava is recognisable, appearing as a white fibrous ridge of the pericardium, extending from (below) the truncated conical apex of the right auricle to (above) the under and anterior surface of the right pulmonary artery, where it becomes lost. It presents the strongest possible resemblance in appearance to the normal (so-called) pericardial "fold of Marshall," as seen in the ordinary condition. The two azygos veins seem to have interchanged conditions. That of the right side is wanting above, only appearing as a very small vessel in the lower part of the posterior mediastinum, at about the centre of which region it crosses behind the aorta to join the unusually large left vena azygos. This vein was of the size of an ordinary vena azygos major, and, passing upwards on the spinal column, close to the left side of the aorta, it arched obliquely forwards in front of the descending arch of the aorta, and over the root of the left lung, to enter into the left side of the abnormal vena cava. The other organs of the thorax were quite regular and healthy. The abdominal viscera were similarly normal. The body was apparently fairly well-nourished, and presented no aspect externally of any defect of the circulation.

Remarks.—I have only been able to discover a single record of an unequivocal instance of the actual observation of a similar case of anomaly to the above—viz., a case observed by Halbertsma, and referred to by Henle. Henle also alludes to a case given by Cheselden, but it seems doubtful, from the description of the older writer, whether he does not refer to an example of the presence of a double superior vena cava—an abnormality which appears to be comparatively less rare. I have been careful in detailing the precise course and relations of the abnormal vessel, as it is interesting to observe that they so exactly correspond to the anatomical situation of normally existing structures which are regarded as "vestigia" of a left primitive superior vena cava—viz., the coronary sinus, the "oblique vein" of the heart, the "vestigial fold" of the pericardium. I regret that I had not the opportunity of examining the arrangement of the superior intercostal veins in this case. The abnormality is plainly explainable on the assumption of a reversal of the normal circumstances of development—i.e., we have here the obliteration of the right duct of Cuvier, and of parts of the right primitive jugular, and right cardinal veins, with the abnormal persistence or abnormal develop-

ment of the same parts on the left side. I have mentioned the absence of valves in the irregular vessel as a small point confirming the identification of parts, as it is known that the small "oblique vein" of the heart is peculiar amongst the other tributaries of the coronary sinus as possessing no valves at its orifice. If we include the normal anatomical arrangement, it would appear that there are three varieties which may be met with in the final development of the caval vessels—viz., (1) a single right vena cava (normal); (2) a single left vena cava; (3) a double vena cava. The first condition corresponds to an obliterated *left Cuvierian duct*, the second to an obliterated *right Cuvierian duct*, the third to an obliteration of the venous branch connecting the two primitive jugular veins.—*March 6, 1880.*

Hydrophobia.—DR. CORLEY said: About this time, or a little later, last year a patient was brought to the Richmond Hospital at half-past nine o'clock at night. I was sent for at ten o'clock, but before I reached the hospital he was dead. The history of the case was as follows:—Two or three months previously he had been bitten in the finger by a little dog. He showed no symptom of mischief until three or four days before his death, when he got a little low-spirited and melancholy. He was a porter in a public-house, and the day but one before his death he was at his work. The day afterwards he was decidedly unwell, and began to wander in his mind, and speak incoherently. On the morning of the day of his death he became violent; and after the people in the house where he was had restrained him for some time, they thought it better to send him to hospital. He was brought there by two policemen, struggling very violently on the way. In the hospital his struggles were described as terrific. As I have said, he died before I saw him. So far as I could learn, difficulty of breathing was his principal symptom—it being stated that he gasped for breath whilst struggling, and spat freely a kind of frothy mucus. Nothing was stated as to the condition of his sexual organs. In less than half an hour after his death there was well-marked rigor mortis. A *post mortem* examination was made by Dr. Harvey. Intense congestion, and even haemorrhages, in the posterior portions of the lungs were found. There was extreme hyperæmia of the brain, with evidences of meningitis. The microscopical appearances closely corresponded with those described by Dr. Gowers and others. The blood-vessels were filled to an unusual degree throughout the cord and medulla, and in the latter position the perivascular lymphatics were crowded with small round cells. In the examination no evidence of miliary abscess was forthcoming. It is noteworthy that there was marked subpleural emphysema in wavy lines. This was manifestly recent.—*April 24, 1880.*

Hydrophobia.—DR. J. M. FINNY presented sections of the spinal cord, &c., of a man, aged forty-two, married, a cardriver, who had been admitted under his care into the City of Dublin Hospital on February 18th, 1880, suffering from hydrophobia.*

Post mortem examination was made eighteen hours after death. The body was in a state of the most marked rigor mortis, with cadaveric staining of the dependent parts. A scar was noticed on the right thumb, but no other mark was discoverable, except a cicatrix along the lower jaw, whence a piece of bone had been extracted by Mr. Wheeler some six months previously.

The skull contents were alone examined. The calvarium was very thick; and firmly adherent to it along the vertex, more particularly at the left side, were the membranes, so that difficulty was experienced in removing the brain. There was excess of fluid in the ventricles, and some general congestion of the surface of the hemispheres. Besides, nothing abnormal was to be noted.

The medulla, upper portion of the spinal cord, and pons Varolii were placed aside for microscopical examination, which Dr. R. J. Harvey kindly undertook to make. He reports as follows on the appearances observed:—"The filling of the blood-vessels was not specially marked, nor was there any perivascular aggregation of cells. In some parts of the medulla there were minute portions of tissue which did not stain, but which were surrounded by a margin of unusually deeply-stained tissue. At first sight I thought that these spots might possibly be the 'miliary abscesses' described by Dr. Gowers; but, on further examination, I failed to discover any characters which would entitle them to be regarded as abscesses."—April 24, 1880.

Report of the Committee of Reference on the microscopical appearances in Dr. Finny's case of Hydrophobia.—With reference to the peculiar bodies noticed by Dr. Harvey, the Committee have observed that small blood-vessels are frequently seen in connexion with the bodies in question. In section the blood-vessel is seen sometimes to one side of one of these bodies. The unstainable material in the centres of the bodies is observed to be sometimes distinctly fatty. The material forming the outer core, and which stains so brilliantly, has not any definite cellular structure. The Committee finally conclude that the bodies in question resemble miliary tubercles more closely than anything else.

* The history of this case appeared at length as a Clinical Record in the number of this Journal for July, 1880, pages 84 *et seq.*

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

TRANSACTIONS OF THE CORK MEDICO-CHIRURGICAL
SOCIETY.

SESSION 1879-80.

President—DR. T. C. SHINKWIN.

Secretary—DR. D. C. O'CONNOR, Jun.

Notes on Rötheln. By DENIS D. DONOVAN, L.R.C.P. & S., Edinburgh ;
Physician, Cork City Dispensary.

Two epidemics of measles have passed over the north-east district of this city within the past two years.

The first epidemic began in June, 1878, and lasted about four months, disappearing towards the beginning of November, when several cases of erysipelas were noticed and a few cases of typhus, but no cases of scarlatina or rötheln. The epidemic was a pure typical measles, commencing with the usual symptoms—coryza, cough and catarrh, and followed in a great many instances by lung congestion and chronic bronchitis, with great debility.

The second epidemic began in October, 1879, when a number of scarlatina cases also occurred—this disease at the time being prevalent in different portions of the city, but I am happy to say it did not spread to any great extent in the north-east district.

The majority of the cases, with one or two exceptions, were of a particularly mild character, and numbers of them were followed by dropsy, with tedious convalescence, which was particularly evidenced in the badly drained portions of the district. The epidemic, as the previous one, spread itself in no definite direction, but travelled in a more or less zig-zag manner through the district, chiefly laying hold of and sticking in the most crowded and least cleanly spots. Towards its termination, as in the previous one, a number of cases of erysipelas were noticed, and amongst them one fatal case, that of an infant who had only recently been vaccinated.

I have seen measles and scarlatina breaking out in the same house together, though not amongst members of the same family, and the first case of rötheln that came under my notice occurred in a house where scarlatina had previously existed. The notes of the cases, as I took them at the time, are as follow :—

November 4th.—I was called to see S. B., a child five years old, who was suffering from an attack of scarlatina, with an ulcerated throat and

a good healthy looking rash. The case progressed very favourably, and was convalescent in a week.

November 12th.—This child's brother, a strong healthy boy, ten years old, who was at school the day previous, was seized during the night with shivering and vomiting. When I saw him at twelve o'clock in the day he was unable to retain anything on his stomach, not even a tea-spoonful of iced water; he was covered with a dusky scarlatinal rash; his tongue dry; throat deeply congested; tonsils swollen; eyes suffused; pulse 120; temperature 106°.

The vomiting continued incessantly, coma set in, and though freely stimulated, he was dead at twelve o'clock next day, absolutely poisoned by the intensity of the disease in thirty-six hours.

This was the most rapidly fatal case of scarlatina I ever saw, where the rash was not suppressed and where convulsions did not set in; probably the appearance of the rash prevented the occurrence of the convulsions.

On November 20th I was called to the same house to see two children, one two years, the other nine months old; both had sickened the previous night, and a rash was coming out on their faces and chests. When I saw it the rash had a most peculiar appearance, and one that I never remembered having seen the like of before; it was not the rash of measles nor yet that of scarlatina, but seemed to me a mixture of both, and I must confess I was rather puzzled at the time, and I was unable to say that they were not cases of scarlatina. The children were hot and feverish, and had slight sore throats; they had no cough or lacrimation, and considering that scarlatina had been in the house, I accepted them as such, but the rash wore off. In a few days the sickness disappeared, and in five days they were as well as ever; they had no sequelæ.

This speedy convalescence in children so young suffering from scarlatina, being entirely contrary to my experience, as also the peculiarity of the rash, afterwards suggested to me that they were not cases of scarlatina, but cases of rubeola or rötheln, and a number of similar cases that I have seen since strengthen my opinion on the subject—cases showing the same mild symptoms, running the same short course, with the very identical rash. Measles and scarlatina prevailing at the time gave me an ample opportunity of comparing and contrasting the three diseases. The notes of two or three cases will fairly describe the disease as I met with it:—

Robert J., aged sixteen years, had measles and scarlatina when young; was at college on Friday, 30th Jan., and went to bed that night feeling quite well; in the middle of the night got sick and vomited, and on awaking in the morning found his face covered with a red rash. When I saw him on the 31st he was complaining of headache and stomach sickness, with a stiff feeling about his neck. His forehead, face, neck, and chest were covered with a dark purple scarlatinal looking rash; his

tongue thickly coated with a yellow fur; eyes suffused and painful, with deep conjunctival injection; his throat was sore, and, looking at it, I found the palate covered with the rash, which extended to the uvula, tonsils and soft palate, producing regular congestion of the parts; there was no ulceration; pulse, 110; temperature, 102°. Ordered him a saline purgative, and to have plenty of hot drinks.

February 1st.—Spent a troublesome night; no inclination to take his drinks; perspired freely, completely saturating the bedclothes; complains of a most unpleasant itchiness over his body, which makes him restless and irritable; the rash had spread down the trunk, and seems thickest on the back over the loins; pulse and temperature same as on previous day.

2nd.—Body covered with the rash, looking a regular lobster; throat feeling sore; itchiness continuing; slept a little; no cough or coryza; slight photophobia.

3rd.—The rash beginning to fade from his face, and continued to disappear from above downwards, the sickness leaving with it. He was able to be up on the 5th all right, but feeling a little weak.

The next case, Janette J., barmaid, aged twenty-five years, had measles when a child, a healthy young woman of full habit, complained on the evening of the 25th March of a sick feeling in her stomach, with inclination to vomit, attributed at the time to the smell of tobacco smoke which she had to endure; did not sleep that night, and felt unwell all next day sitting at the fire, with a chill over her; no appetite. On 27th I found her complaining of headache and sore throat, with a swelling and stiffness about the neck; the cervical glands were tender and enlarged; her face and neck were covered with a purple measly-looking rash, which extended to the throat, producing congestion; the rash was just coming out on her arms and hands, as shotty looking papule, quite different in appearance from that on her face and neck. She had no cough or coryza; tongue clean; bowels confined; pulse, 104; temperature, 102°; was exceedingly uneasy about her throat, as she had suffered from ulcerated sore throat on more than one occasion; complained very much of the headache, which was very severe. Ordered saline aperient and warm drinks.

March 28th.—Body covered with the rash; spots running into each other; no cough; still complaining of headache; bowels opened twice; slept badly; pulse, 104; temperature, 103°; throat feeling worse, but showing no sign of ulceration; perspiring freely.

29th—Headache better; rash fading from face and neck, which feels stiff; pulse, 99; temperature, 100°; tongue not so clean; no cough; but complains of itchiness all over the body.

30th—Feeling much better; rash completely gone; complained of stiffness in her neck for a few days, and weakness in her limbs; says she

is sure she took the sickness from some old clothes that had been brought to the house by a pedlar.

The third case was Margaret D., twenty-eight years old, nursing a baby of four months, never had measles or scarlatina, complained of headache on the night of April 10th, but slept pretty well, and was able to go to Queenstown next day. On the 12th felt very chilly, with pains in her back and down her legs, and noticed a decline in the quantity of milk. On the 18th was unable to get up, had a rash on her face, and felt the milk still declining.

I saw her on the 14th, complaining of headache and pain in her side shooting up to the left shoulder, covered all over with a papular eruption, with deeply injected conjunctivæ; throat sore; tonsils and soft palate covered with the rash; neck feeling stiff; no glandular enlargement; no cough or coryza; pulse, 100, very weak; temperature, 100°; skin moist.

15th.—Slept well; tongue clean; pulse, 80; temperature, normal; quantity of milk increasing; rash fading from face, legs, and arms; can still be seen on her chest; throat feeling uncomfortable; able to be up next day, but felt her head giddy; nursed her baby throughout, which, to the present date, has shown no symptoms of sickness, though the disease developed in another child, the rash coming out on May 2nd, but the child was well in a few days, and was about with the rash on it.

Rötheln, like measles and scarlatina, was first supposed to be a variety of smallpox, and it was only when both these diseases were separated from smallpox and distinguished from each other, that the disease began to be considered as a distinct exanthem. That it is so I do not think there can be any reasonable doubt, though many authorities strongly deny its existence as such, and some that there is such a disease at all, for if we look to our library we find but a few of the text-books even allude to it. Watson does not mention it in his lectures, Tanner thinks it unnecessary to describe it, whilst Reynolds, in his "System of Medicine," puts it down as an error in diagnosis. It was first described by German physicians about the end of the last and beginning of the present century, and especially by Hildenbrand, who named it rubeola and considered it, like Copeland, as a hybrid which existed during the simultaneous prevalence of epidemics of measles and scarlatina—an opinion which our present epidemic goes far to support. The characteristics of the disease may be briefly summed up as follows:—An incubative stage of a fortnight, the disease beginning with pains in the limbs, headache, and stiffness in the neck; the short pyrexial period, the rash appearing in most instances in twenty-four hours, beginning on the face and spreading downwards over the entire body—first appearing as a papular eruption like strophulus, then assuming a measles character, and finally, the spots coalescing, produced an appearance resembling

scarlatina. It generally took about three days before the body was entirely covered with the rash, during which time the fever was at its height. The rash then faded as it began from above downwards, and with it all feverish symptoms. The pulse ranged from 100 to 105; the temperature sometimes reached 102°, and in every instance you had headache and vomiting, sore throat without any ulceration, cervical glandular enlargement with occasional tenderness. There were no thoracic complications, no catarrh or coryza, and no sequelæ.

I am anxious to hear the opinion of the members of this Society. Do they consider that measles and scarlatina must co-exist, in order to meet with a case of rötheln? I am of opinion that they must.

The spread of the epidemics in both instances was principally traced to two sources—namely, schools and laundries. Children were permitted to attend the former, coming from infected houses and bringing with them the seeds of infection, which they imparted to those they came in contact with, who, in their turn, carried home the disease, and if they did not sicken themselves a sister or a brother was sure to, and so the disease was spread in different directions.

The new Public Health Act for Ireland, 1878, amply provides for such a danger, and by section 146 "any person who shall knowingly or negligently send a child to school, who, within the space of three months, has been suffering from any dangerous infectious disorder, or who has been resident in any house in which such dangerous infectious disorder shall have existed within the space of six weeks, without a certificate from some duly qualified medical practitioner that such child is free from disease and infection, and unless his or her clothes have been properly disinfected, shall be liable to a penalty, &c."

Fortunately the heads of some of our schools are now beginning to realise the utility of such a provision, and a clean bill of health is occasionally insisted on before a child coming from an infected house is permitted to enter them. In like manner infection is spread through laundries. Clothes are permitted to lie in an infected house, and at the end of a week are sent home, clean (?), without any intimation, by an ignorant washerwoman, who, if she has a case of scarlatina or fever in her house, does all she can to screen it from the authorities, and will absolutely have such a case lying ill without medical attendance, fearing that if she called in the doctor her business would be injured. Cases of this kind have come under my own personal observation, and I have had opportunities of seeing the spread of infection through such establishments, a number of them being situated in my dispensary district. It is utterly impossible to think of stamping out an epidemic in such a place until we have laundry registration, with proper supervision and periodical inspection.

THE BOSTON
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CLINICAL RECORDS.

MEATH HOSPITAL, DUBLIN.—*Two cases of Graves' Disease (Exophthalmic Goitre).* Being the substance of a Clinical Lecture delivered by ARTHUR WINNE FOOT, M.D., F.K.Q.C.P.; Senior Physician to the Hospital.

THERE have been during the past summer, or the greater portion of it, two cases of this sufficiently rare disease under your notice in the same ward—No. 13. These cases call for some observations, which may be more judiciously made here than at the bedside. One of them has been able to return home; the second recently took typhus fever, and in the latter case the observation of the mutual progress of the two diseases presented you with an opportunity, probably unique, of studying the effect of an acute fever upon the pseudo-pyrexial condition present in Graves' disease. Cases of Graves' disease, as exophthalmic goitre should surely be called here, are not of frequent occurrence. Austin Flint^a states that he has recorded only five cases during the last ten years in a wide field of clinical observation; so that you are fortunate who have seen two cases here almost at the same time.

It is right that exophthalmic goitre should be spoken of here by the name of Graves' disease, although that name has been given to it by a foreigner (Trousseau), because it was in the session 1834–5, now 46 years ago, that in this hospital that illustrious Irish physician, under the title of "A newly observed Affection of the Thyroid Gland," drew attention to the hitherto little noticed trinity of symptoms, which it would now be considered disgraceful for a student to be ignorant of.^b

CASE I.—10th April, 1880, a young woman from the South of Ireland, twenty-six years of age, was admitted to the Meath Hospital suffering from irregular and rapid action of the heart, enlargement of the thyroid gland, and prominence of both eyes.

Her ailment had been some time in arriving at its complete development. After a period of unusual depression, about two years before she came under observation, her "heart began to beat," a year afterwards "her neck swelled at each side," and lastly her eyes had been prominent for ten months. The cause of the *neurosis* apparently was a chronic state of unpleasantness between the patient and her father arising from her persistent refusal to marry a man he had selected for her. Family

^a Diseases of the Heart. 2nd Edition. 1870. P. 307.

^b Lond. Med. and Surg. Jour. (23rd May, 1835). Vol. II., p. 517. Being Lect. XII. of Clinical Lectures delivered at the Meath Hospital during the Session 1834–5.

disagreements arising out of this matter led to acts of violence, threats, and persecutions, which rendered her domestic life a more than usually unhappy one.

Unless when excited by conversation or the presence of strangers, the action of the heart, although rapid, was regular, and was unattended with any constant murmur at base or apex. There was a loud systolic bruit in each carotid artery, and a very strong purring thrill in the left half of the thyroid gland. She heard a continual "buzzing in her neck," and when an attack of palpitation came on from excitement she felt as if her neck would burst. She had a constant sensation of being overheated, and exhibited a great tendency to perspire; her feet and hands were always damp; "the least thing made her perspire." Her neck and chest, as well as her face, had the violet shade of venous hyperæmia. She felt everything on her too tight. Insomnia was not a marked symptom, as is usual in such cases; nor were the catamenia suppressed, though scanty and pale. The mammary glands were not particularly atrophied.

The extreme and symmetrical prominence of her eyes, forming the most obvious symptom to a casual observer, and giving her emaciated face a strange and wild appearance, was the reason of her having come to Dublin for the advice of an eminent oculist, who, finding no visual derangement, suggested to her to submit to general medical treatment. The eyeballs were, as usual in this complaint, directed downwards and outwards, incompletely covered by the lids during sleep, and irritated often when exposed to dry or dusty air, from the imperfect action of their natural *tutamina*. When exposed to sudden excitement, such as the morning visit of the students, she said she felt her "eyeballs start," and was for a time afraid lest they should leave their sockets—particularly as some of her friends had given her the comforting assurance that they were liable at any moment to do so, inasmuch as "their strings were loosened."

The treatment which was adopted upon her admission to hospital, and steadily persevered in, was the use of digitalis and iron, with nightly bandaging of the eyes, and painting the thyroïdal swelling with liniment of belladonna. The improvement, which was very gradual, commenced with lessening of the excitement and slowing of the action of the heart. This was followed by marked reduction of the thyroïdal swelling. She left hospital on 9th June, 1880, of her own accord. At this time the exophthalmos was still quite sufficient to attract attention. After her departure she spent two months at the seaside, near Dublin, continuing to take digitalis and iron regularly, and bathing every day in the open sea. When next seen, on 20th August, prior to her return to the South of Ireland, one could scarcely recognise her: she had got quite fat and rosy, was able to walk from ten to twelve miles a day, "never felt stronger in her life," her "appetite never was better." The heart did

not now beat at all as it used, and she slept soundly. She was convinced that the sea-bathing was most efficacious in reducing the protrusion of the eyeballs; she said "they got smaller after each dip," and that others besides herself had made the same observation. She had lost a great deal of the morbid timidity, which had afflicted her, or, as she expressed it, she felt a great deal more confidence in herself. This patient had been to Knock before she came to the Meath, but had not derived the least benefit from her pilgrimage thereto.

CASE II.—On 9th August, 1880, a young woman from the West of Ireland, twenty-two years of age, was admitted to the Meath Hospital, suffering from rapid and excited action of the heart, pulsating enlargement of the thyroid gland, and protrusion of both eyeballs. The disease had commenced four months previously with "a beating of the heart," increased by muscular exertion. If any cause was assignable it was "hard work," as her duties of domestic servant in an out-of-the-way region were numerous and laborious—including washing. She was a fair-haired girl, 5 ft. 4 in. in height, with bluish eyes and regular features. From having been quite plump she had become decidedly thin since affected. She was continually sensible of a feeling of warmth, which was quite perceptible to the hand of an observer, was very prone to perspire, and constantly thirsty. The catamenia were stated to be regular and of the same quantity and colour as they had always been. Her muscular system was pervaded with a constant tremor, so that she was "always in a tremble," and it was impossible to count her pulse in the radial artery from the agitation of the brachial muscles; hence it was for the first four weeks of her stay estimated by observations on the heart itself.

The treatment which was carried out in this case was in the main the use of iron and digitalis, associated with bandaging the prominent eyes, and later on galvanism of the sympathetic. Immediately after admission she was ordered—

- R. Tinct. digitalis, 3 iij.
- Acid. phosph. dil., 3 ij.
- Tinct. ferri perchlor., 3 ij.
- Aquæ ad 3 viij. Sum. 3 ss. ter die.

The quantity of digitalis in the mixture was gradually increased until on the 6th Sept. she was taking 40 min. of the tincture three times a day.

18th August.—She was ordered in addition to her mixture the following:—

- R. Pulv. digitalis, gr. xij.
- Fer. reducti, gr. xxiv.
- Ext. nuc. vom., gr. vj.
- Ext. gent. q. s. Div. in pil. xij.; sum. unam ter die.

23rd Sept.—The quantity of digitalis was increased to $1\frac{1}{2}$ grs. in each pill.

The improvement in this patient was very gradual, and the first amendment was in the condition of the eyes.

The note for 18th August is, "Everyone remarks that her eyes have become less prominent." Then the tumultuous action of the heart began to subside, although its rate continued very rapid—120–150. 21st August.—The note is, "She is not now as warm as she used be." 6th Sept.—The pulse can be counted at the wrist from the subsidence of the muscular agitation. 21st.—She is now able to sleep on her left side; hitherto the great increase of action of the heart in that position had prevented her doing so. "The swelling is quite gone from her throat." 23rd.—The sensation of heat is now much less than formerly, and she is no longer "hot, damp, and shaky," as she used be.

Compression of the eyeballs at night with a light muslin bandage was of service to both these patients. Case I. sometimes objected to it that it pushed her eyelashes into her eyes. Case II. considered that it made her eyes water more than they did when she dispensed with it. Both of them, however, thought it gave a feeling of support *ab extra* to the globes which was comfortable, and that it helped to push the eyes back into their heads. 3rd Sept.—Galvanisation of the cervical sympathetic (so-called) was commenced and daily used for from ten to fifteen minutes with a current from twenty Leclanché cells. One electrode, the negative, was deeply pressed into the auriculo-maxillary fossa, and the other, with a good-sized sponge, applied over the sixth or seventh cervical vertebra, or to the manubrium sterni, close to the border of the sterno-mastoid. Local electrification of the eyeballs, as recommended by von Graefe, was also frequently used with the same current. Mr. Austin Cockle, clinical clerk, who attended daily to the galvanism, was not satisfied that the rapidity or force of the heart's action was appreciably affected by the application of the electricity, but it seemed to have a sedative or soothing influence upon the general nervous excitement. Galvanisation with the constant current has recently been adopted in this complaint, in accordance with the theory of a primary affection of the sympathetic. Von Dusch appears to have been the first to treat a case for a considerable time in this way, and he succeeded in reducing the rate of the pulse from 180 to 70 or 64 beats, and in diminishing the exophthalmos. Eulenburg^a thus treated a lady, aged fifty, sent to him by von Graefe, who had an habitual pulse of 108–180, with abnormal tension of the carotids. When her cervical sympathetic was galvanised by placing the negative pole upon it with a very weak current (from six to eight elements) the pulse

was observed to sink gradually to 84, or even to 70, while the tension of the carotids and radial arteries continually diminished.

It will generally be found that the chief points of concern to students or to those investigating this disease for the first time relate to (a) its nomenclature, (b) its pathology, and (c) the most obvious of its symptoms—viz., the exophthalmos. As to the duration, prognosis, and treatment, they are not, as a rule, so much interested.

The honour of naming this disease, or rather this group of symptoms—of which the chief are palpitation with accelerated pulse, swelling of the thyroid gland, and exophthalmos—is divided between Graves and Basedow, and is therefore known indifferently as Graves' disease, or morbus Basedowii. It was not, of course, by themselves these titles were assumed; they were invented and adopted by the friends and admirers of these two great original observers. In 1860 Troussseau,^a on the authority of Dr. Stokes^b—that “this disease remained but little known until the publication of Dr. Graves' lectures in 1835”—christened it *la maladie de Graves*.

In 1858 the name of morbus Basedowii was proposed for it by G. Hirsch, on account of the description of it by von Basedow in 1840. Von Basedow himself described it under the name of “Glotzaugenkrankheit,” or “the goggle-eye disease.” Graves and Basedow do not share the merit of priority of description without dispute, for Galezowski^c claims for his brother oculist Demours the first description of it in 1818, while the German Emmert^d gives the merit to an Englishman, Caleb Parry,^e in 1825. In 1802 the Italian Flajani published observations upon the coincidence of goitre with persistent palpitation of the heart, but makes no remark upon the condition of the eyes in his cases. It will be seen from this very brief account of its history that the disease, as an entity, is a result of the observation of the nineteenth century.

As a rule, in German books you will find it written of under the heading of morbus Basedowii, although in the article upon it in “von Ziemssen's Cyclopaedia of the Practice of Medicine” (Vol. XIV., p. 75) this name is bracketed with that of “Graves' disease” as a synonym. The name of *exophthalmic goitre* is that by which it is most generally known, and under which Virchow^f writes of it. That of *tachycardia strumosa exophthalmica*, proposed by Lebert^g in 1862, is unlikely to

^a Clinical Medicine. Syd. Soc. Vol I., p. 542.

^b Diseases of the Heart and Aorta, p. 284.

^c Étude sur le Goître Exophthalmique. Gaz. des Hôp. 1871. 425.

^d New Syd. Soc. Year-book. 1871-72. P. 77.

^e Collections from the unpublished writings of the late C. H. Parry, M.D. P. 111. London, 1825.

^f Pathologie des tumeurs. 1871. Vol. III., p. 267.

^g Die Krankheiten der Schilddrüse. 1862. P. 307.

supplant it, although it specially designates one of the most prominent features in the disease—viz., the rapidity of the heart's action.

The attempts to form a theory of the disease—at least such a one as would be able to derive the three cardinal symptoms from a common source—have, as Eulenburg observes, led, at the best, to but unsatisfactory results. The increased activity of the heart, which is usually the primary phenomenon in the disease, has been considered due to a disturbance of the functions of the cervical sympathetic, in the trunk of which, as von Bezold has shown, run the excito-motor fibres which accelerate the action of the heart. As irritation of the cervical sympathetic increases the rate of the pulse, the assumption of a permanent condition of irritation in the cervical sympathetic would explain satisfactorily the increase in the contractions of the heart. Owing to the difficulty of maintaining this assumption, Friedreich has suggested a different explanation. He thinks the vasomotor nerves which originate from the sympathetic are in a state of paralysis, which may produce a dilatation of the coronary arteries, an increased flow of blood to the muscle of the heart, and thereby an increased excitement of the ganglia of the heart. Others place the seat of the disease farther up in the cervical medulla, or the medulla oblongata.

The increased action of the heart which is so prominent a feature in Graves' disease was more marked in Case II. than in Case I. The average daily rate of the pulse in Case II. during the first month she was under observation was, omitting decimals, 128. During the second month it was 121. The pulse was under 120 for the first time on 25th August, and under 100 for the first time on 11th October; yet during these two months she was taking almost maximal doses of digitalis, bearing out the observation of Eulenburg^a—viz., that experience has shown that remedies which depress the pulse (digitalis, veratrin), which are efficient in other diseases, often fail of their action in Basedow's disease, and that their therapeutic value is really little or nothing. It is on the clinical symptomsof rapid pulse Lebert's name, *tachycardia strumosa exophthalmica*, is founded. In a case recorded by Dr. MacDonnell^b the pulse was never under 120, and sometimes as high as 200; in one given by Dr. Banks it was so rapid as to be impossible to count; and in four cases given by Mr. Taylor it ranged between 134 and 144.

The elevation of the bodily temperature which was quite perceptible to the hand in Case II., and often alluded to by the patient, was not in these two cases made the subject of any precise experiments. Thermic effects are well known to be among the less constant symptoms of Graves' disease, but, as a rule, the elevation observed by instruments is not very considerable, though it appears rarely wanting when the test is

^a Von Ziemssen. Op. cit. Vol. XIV, p. 101.

^b Dub. Jour. of Med. Science. Vol. XXVII, p. 203.

applied carefully and repeatedly. Paul found in one case an elevation of from $0\cdot5^{\circ}$ to 1° C.; Teissier often from 1° to 2° ; Cheadle in his report of eight cases says he always found elevation of temperature.^a

As to the exophthalmos the idea of intra-ocular distension, as held by Dr. Stokes, is now abandoned, because such a condition—of hydrophthalmia—could not exist without disturbances of vision and ophthalmoscopic appearances, neither of which are observed. Among the causes to which the protrusion of the eyeball is referred are—(a) œdema of the cellular tissue at the back of the orbit; (b) venous congestion of the tissue in the same part; (c) increased deposition of fat at the back of the orbit. Dalrymple's explanation of it is an absence of the proper tonicity of the muscles by which the eyes are retained in their natural position in the orbit, and some amount of venous congestion of the tissues forming the cushion behind the globes. Galezowski^b thinks the protrusion of the eye is due to the contraction of the small muscles in Tenon's capsule supplied by the sympathetic nerve. Eulenburg,^c who may be taken as the most recent opinion of authority on this matter, says, in view of all the facts he is compelled to believe that venous congestion and retro-bulbar growth of fat certainly play the chief part in [the exophthalmos of] Basedow's disease, but that the participation of the smooth orbital muscles innervated by the sympathetic cannot be wholly excluded.

Since this was written Case II. has died (26th October) of typhus, on the twelfth day of the fever. She had repeated attacks of convulsions for the twelve hours preceding her decease.

NOCTURNAL TERRORS IN CHILDREN.

An analysis of Dr. Wertheimer's description of this malady, by Dr. Gottardi (*Arch. Méd. Belges*, May, 1880), contains the following therapeutic points:—All causes of nervous excitement should be carefully avoided, especially during the hours immediately preceding bed-time. Bland and scanty supper, without stimulating drinks, such as tea or coffee. A room sufficiently large and moderately lighted, in order that the child may, on wakening, immediately recognise the surrounding objects. Quinine and bromide of potassium, to the latter of which some chloral may be added, are the drugs which have proved most serviceable. The general health of the child or infant should also be improved by a suitable regimen, including tonics, open air exercises, and gymnastics.—*New York Med. Record*, August 28, 1880.

^a Eulenburg, in *Cyclop. Pract. Med.* Von Ziemssen. Vol XIV., p. 85.

^b Étude sur le Goitre Exophthalmique. *Gaz. des Hôp.* 1871. P. 425.

^c Basedow's Disease. Von Ziemssen. Op. cit. Vol XIV., p. 93.

**THE BOSTON
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SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

*Of Eight Large Towns in Ireland, for Four Weeks ending Saturday,
October 9, 1880.*

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOTIC DISEASES							Annual Rate of Mortality per 1,000 Inhabitants
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhea	
Dublin,	314,666	724	887	5	23	39	1	34	26	137	36·7
Belfast,	182,082	512	356	—	1	4	2	14	12	57	25·4
Cork,	91,965	176	196	—	—	8	—	1	7	14	27·7
Limerick,	44,209	86	69	—	—	5	—	—	2	9	20·3
Derry,	30,884	72	43	—	—	—	—	3	1	—	18·1
Waterford,	30,626	69	126	—	—	10	—	—	8	63	53·5
Galway,	19,692	51	43	—	—	—	—	—	2	1	28·4
Sligo,	17,285	40	41	—	—	—	—	—	—	—	25·8

Remarks.

An excessively high death-rate prevailed in Waterford (where summer diarrhoea and cholera were extremely fatal) and in Dublin. In the other towns also, with the exception of Limerick and Derry, the mortality was very high for the season. In the sixteen principal town districts of Ireland the death-rate was 29·0 per 1,000 of the population annually; in twenty large English towns it was 23·0. It was 20·1 per 1,000 annually in London, 20·6 in Edinburgh, 19·0 in Glasgow, 35·7 in the Dublin registration district, when the deaths of persons admitted into public institutions from localities outside the district are omitted, and 38·3 per 1,000 within the municipal boundary of Dublin, subject to the same correction. The mortality among children in the Irish capital was dreadful. Of the 887 deaths registered no fewer than 458, or 51·6 per cent., were of children under five years of age; and as many as 243, or 27·4 per cent., were of infants under twelve months. Diarrhoea killed 110 children under five years of age, and in 81 other instances death was attributed to "convulsions." Besides diarrhoea, scarlatina, whooping-

cough, and measles were all rife and fatal in Dublin, where the deaths from zymotic affections numbered 298, compared with an average of 147·6 in the corresponding period of the previous ten years. Of the 26 deaths from fever, 6 were referred to typhus, 17 to typhoid, and 3 to so-called "simple-continued" fever. Scarlatina was prevalent in several towns, notably in Waterford, where it caused 10 deaths. In this town diarrhoea prevailed almost as a pestilence, exactly one-half of the registered deaths being attributed to this preventable zymotic. Diseases of the breathing organs were, as usual, fatal in Dublin. They were credited with 104 deaths, compared with a ten-years' average of 62·0. Bronchitis caused 88 and pneumonia 11 of the 104 deaths; the averages being—bronchitis 42·5 and pneumonia 10·2 deaths. At the close of the period the number of cases of the chief epidemic diseases under treatment in the principal Dublin hospitals were as follow—Smallpox, 14; measles, 18; scarlatina, 41; typhus, 50; enteric fever, 47; pneumonia, 6.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of September, 1880.

Mean Height of Barometer,	-	-	-	29·957 inches.
Maximal Height of Barometer (on 28th at 9 p.m.),	-	30·500	"	
Minimal Height of Barometer (on 14th at 1 30 p.m.),	-	29·244	"	
Mean Dry-bulb Temperature,	-	-	-	57·7°
Mean Wet-bulb Temperature,	-	-	-	55·4°
Mean Dew-point Temperature,	-	-	-	53·3°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	407	inch.	
Mean Humidity,	-	-	-	85·5 per cent.
Highest Temperature in Shade (on 4th),	-	-	-	74·8°
Lowest Temperature in Shade (on 19th),	-	-	-	45·3°
Lowest Temperature on Grass (Radiation) (on 19th),	-	41·7°		
Mean Amount of Cloud,	-	-	-	58·7 per cent.
Rainfall (on 15 days),	-	-	-	2·061 inches.
General Directions of Wind,	-	-	-	W., S.W., & S.E.

Remarks.

September was, on the whole, characterised by favourable weather. It is true that between the 10th and 22nd the atmosphere was in a disturbed state, and numerous areas of low pressure passed over the British Islands. At the beginning and close of the month, however, conditions were anticyclonic, so that fair, though rather damp, weather prevailed. From the 1st to the 7th gradients for S.W. winds existed in Ireland, where the air became close and damp. Saturday, the 4th, was the warmest day experienced this season in Dublin and throughout the

country generally. On this day the thermometer rose to 75° in Dublin, 78° at Parsonstown, 87° in London, and 88° at Nottingham and Cambridge. On Saturday, the 11th, a subsidiary depression passed across England, causing torrents of rain at many stations in that country. A spell of broken autumnal weather, with high winds and frequent heavy rains, followed. On the evening of the 13th a deep atmospherical depression came in over Ireland from the Atlantic with great rapidity, so that at midnight a fresh S.E. gale sprang up, accompanied with heavy showers of rain. Next morning the centre of this cyclone was found near Valencia, Co. Kerry, where the barometer stood at 28.95 inches. During the day the depression travelled south-eastwards to Cornwall, but at night it changed its course, and, moving towards E.N.E., was shown near Yarmouth on the morning of the 15th. Torrents of rain fell generally—3.11 inches being registered at Yarmouth on the 14th—15th. Strong northerly gales prevailed in Ireland and Great Britain. The weather subsequently remained unsettled until the 23rd, when an irregularly shaped and quickly altering area of high pressure (anticyclone) developed over the English Channel, throwing a genial S.W. current upon Ireland, and causing very mild but cloudy and rather damp weather in this country. So decided was the return of warmth that the mean temperature was 10° higher at the close than it had been at the beginning of the week ending Saturday, the 25th. On the 28th the anticyclone reached its fullest development—the barometer rising to 30.50 inches in the east of Ireland and centre and east of England. Much cloud, haze, and fog accompanied this high pressure system, which held to the end of the month. In Dublin there were no electrical disturbances. Solar halos were seen on the 12th, 13th, 17th, and 27th. The atmosphere was foggy on the 4th, 26th, 28th, 29th, and 30th. The wind was very high from the 14th to the 18th.

BENZOATE OF SODA IN WHOOPING-COUGH.

DR. TORDEUS (*Journal de Méd., &c., de Bruxelles*, May, 1880) writes that he has prescribed the benzoate of soda in a number of cases of whooping-cough, and that in all the cases the parents reported that the coughing fits began to diminish in force and frequency after one or two days of treatment. He gives four grains of the salt every hour to a child of two or three years. The drug seems not alone to diminish the force and frequency of the paroxysms, but also to exert a favourable influence on the mucous membrane of the respiratory tract, and to prevent the development of serious pulmonary complications.—*New York Med. Record* August 28, 1880.

THE BOSTON
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PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

FIBROMATOSIS, OR GENERAL HYPERPLASIA OF THE CONNECTIVE TISSUE.

UNDER the name fibromatosis Professor Beneke, of Marburg, describes a peculiar constitutional anomaly, which is characterised by a great tendency to connective-tissue hyperplasia in the different organs of the body, and which is more closely allied to the constitutional anomalies resulting in hyperplastic new growths than to the phthisical process, although it often presents itself under the form of pulmonary phthisis. These cases of phthisis pulmonum are characterised, even after death, by the powerful build of the body, the marked development of the panniculus adiposus, and the blood plethora, all of which contrast strongly with the destructive process in the lungs, as well as with the external appearances in cases of ordinary phthisis. The changes in the lungs in these cases are very various, but they all seem to begin with hyperplasia of the connective tissue. In some cases the lesions consist chiefly in a marked thickening of the interstitial connective tissue, the contraction of which leads to atrophy of the pulmonary tissue as the result of compression, and to irregular dilatations and contractions of the larger bronchi. In such cases often no traces of caseous degeneration of the new growth can be found. In other cases the interstitial connective-tissue hyperplasia is less predominant. The bronchial dilatations are larger, and bronchiectatic cavities are developed, in the neighbourhood of which more or less numerous fatty and caseous masses are found. In still other cases these lesions are found, perhaps, in the upper lobe, while in the lower lobe miliary tubercles or peribronchitic caseous nodules are met with. Between these forms and true caseous desquamative pneumonia there is no other intermediate form. For both classes of cases the clinical diagnosis must be pulmonary phthisis. The pleura usually present large thickened areas. The liver, kidneys, and spleen are usually hard in consequence of extensive growth of the interstitial connective-tissue; the heart is, as a rule, hypertrophied. Now, Prof. Beneke believes that, just as there is a general hyperplasia of the adipose, the bony, and the epithelial tissues, so there is in these cases an analogous hyperplasia of the fibrillar connective tissue of the body, resulting from some obscure modifications of the general constitutional condition and the nutritive changes. These modifications, probably, differ but little

from those which lie at the bottom of the known hyperplasias just mentioned. This theory finds a support in those cases where the pleuræ and peritoneum are studded with countless nodules, varying in size from a millet-seed to a pea, which resemble, at first sight, miliary tubercles, but are shown by microscopic examination to be minute fibromas. Prof. Beneke would also cover with the mantle of fibromatosis those cases of pachymeningitis in robust individuals, where death results from interstitial nephritis, and where, at the autopsy, connective-tissue hyperplasias are also met with in the lungs, serous membranes, liver, &c. Further, the granular kidney, in robust individuals, which has been so much spoken of in late years, likewise belongs, in all probability, to the same class; this would harmonise well with Buhl's theory, that the connective-tissue thickening in the serous membranes, heart, and lungs, is the result of a "fibrous inflammation."—*Deutsche medic. Woch'en*, July 17, 1880, and *N. Y. Med. Record*, Sept., 1880.

OCCIPITAL HEADACHE AS A SYMPTOM OF URÆMIA.

RECENT observations on the symptomatology of Bright's disease disclose the fact that severe pain located in the occiput may be regarded as one of the symptoms of the disease. Dr. E. C. Seguin has recently met with two cases (*Archives of Medicine*, August, 1880) in which occipital headache was so localised and persistent as to give rise to a strong suspicion of organic disease of the cerebellum. In one case a positive conclusion was only reached by means of a *post mortem* examination, which showed that the cerebellum and the other parts of the encephalic mass were normal, while both kidneys were extensively diseased. The left kidney was found completely diseased, granular and hard in places, its membranes peeling off with difficulty. It had a reddened, congested appearance, and showed evidences not only of a chronic trouble, but also of a more recent acute inflammatory action. The right kidney was found to be only partially affected—somewhat congested, and with the same type of lesion. These cases both now appear to have been examples of contracted kidneys and uræmia. Both patients were adults, had suffered from chronic headache, more or less of the migraine type; at a given period the headache became transformed into a localised occipital pain very different from the former attacks. The symptoms of renal disease were not marked; in one case there was no œdema, in the other a mere trace; neither patient had the dyspeptic symptoms or the frontal headache which often suggests renal disease, and neither patient had the "Brighty look" which is so well known. The occipital sensation in these cases was true pain, not the painful paræsthesiæ which are sometimes due to lithæmia and oxaluria, and sometimes to eye-strain, and which are erroneously (or rather insufficiently) designated as cerebral hypersæmia. In Case II. the pain extended down the cervical spine, and

was so much aggravated by movement as to suggest a rigid state of the neck. In Case I. there was once stiffness of the neck in an attack. This peculiar headache was distinctly paroxysmal, but not at all periodical or influenced by any apparent outward circumstance. In both cases nausea accompanied the headaches, and in Case II. it is clearly stated that the nausea was secondary in point of time. Case I. was made relatively clearer by the previous history of convulsions and albumen in the urine. Dr. Seguin is inclined to believe that the publication of these cases may serve to render more accurate the diagnosis of occipital headache, and to illustrate the utility of critically examining the urine in cases of any degree of obscurity, more especially as occipital headache is scarcely mentioned as a symptom of uremia.—*N. Y. Med. Record*, Sept., 1880.

A NEW PHYSICAL SIGN IN THORACIC ANEURISM.

DR. DRUMMOND, of Newcastle-on-Tyne, states that he has discovered a physical sign which will apparently be of considerable value in the diagnosis of aortic aneurism, should it not turn out to be pathognomonic. When a patient who is suffering from thoracic aneurism inspires deeply, and then closes the mouth and expires slowly through the nostrils, a puffing sound is heard, on auscultating the trachea, which is synchronous with the cardiac systole. This sound is best heard with the binaural stethoscope, and is evidently a sudden involuntary expiration caused by the sudden systolic expansion of the sac expelling air from the chest. This physical sign has been demonstrated by Dr. Drummond to be absent in cases of aortic valvular disease without aneurism, whilst it is present in every case of aneurism which has come under his notice since the discovery of the sign—viz., four; and he also thinks it will be of importance in distinguishing between aneurism and sarcoma of the lung. He has demonstrated it before the Northumberland and Durham Medical Society. [The above physical sign appears to us to be an extension of that described by Surgeon-Major Oliver in *The Lancet*, Sept. 21st, 1878, p. 406.—ED., PERISCOPE.]

CONJUNCTIVITIS FROM CHLORAL.

AT a recent meeting of the N. Y. Clinical Society Dr. J. H. Emerson mentioned a case of ophthalmia produced by the use of chloral hydrate. The patient commenced taking chloral nightly for the relief of an attack of asthma. Shortly after he began its use, the conjunctiva became injected, and photophobia existed with profuse lachrymation. On discontinuing the chloral immediate improvement resulted.

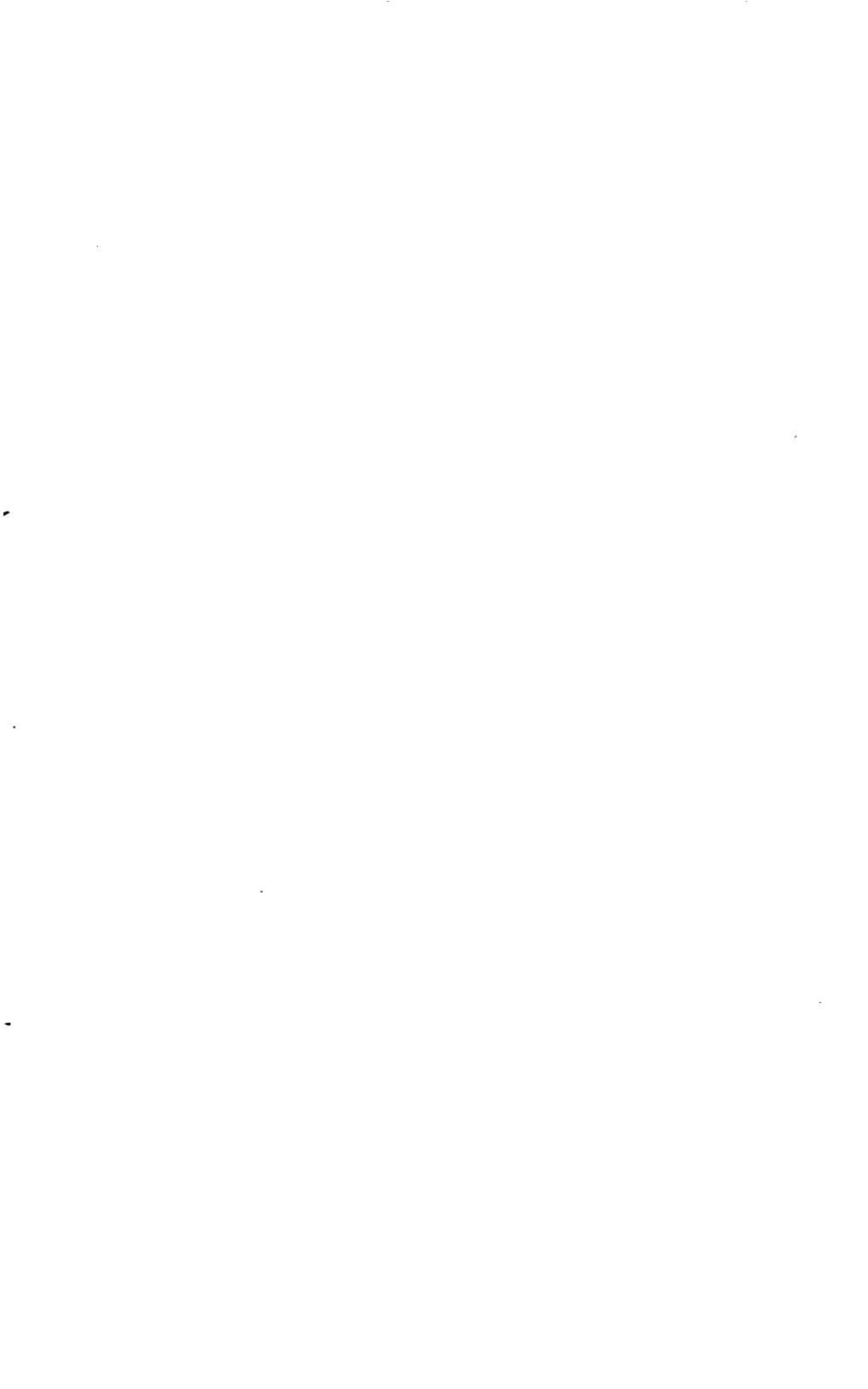


PLATE I.

Fig. 1.



Half Size.

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Fig. 2.



Half Size.

Fig. 3.



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THE DUBLIN JOURNAL
OF
MEDICAL SCIENCE.

DECEMBER 1, 1880.

PART I.
ORIGINAL COMMUNICATIONS.

ART. XVI.—*The Treatment of Genu Valgum by Condylotomy, with the Chisel.* By R. L. SWAN, Fellow and Member of Surgical Court of Examiners, Royal College of Surgeons, Ireland; Surgeon to the Dublin Orthopædic Hospital.

I DO not here mean to discuss the relative merits of different methods for the cure of genu valgum, nor do I advocate operative interference in any but severe cases; the milder ones may, I think, be reserved for splints, with or without tenotomy. I shall, however, briefly give the reasons which led me to prefer and practice the plan above denominated.

Viewing the altered mechanical relations of the parts, the section proposed has always seemed to me the most rational means for their rectification. My attention was especially directed to the subject by the report of a case by Mr. Annandale, given in Braithwaite's "Retrospect," in the second volume of 1875, which may be regarded as a severe method of obtaining the same result.

I exclude the consideration of the many other operative expedients, which, although they appear to have been more or less successful in the hands of the surgeons who adopted them, are not, I think, likely to be generally practised.

The development of the idea of rectifying genu valgum by a separation of the inner condyle, has resulted in its section by the saw (Mr. Ogston's) or by the chisel (Mr. Reeves') operation.

I have adopted the latter plan, although the success which has been attained by many surgeons in the performance of Mr. Ogston's operation has seemed to prove that what in my estimation were objections were practically harmless. I shall briefly state those objections. The first and chief of them was the mechanical lesion of the knee-joint. It seems to me impossible to separate the condyle by any saw with the same harmlessness to the articulation as by a sharp chisel. I may here state that one of the strongest reasons (but of which I now doubt the validity) which induced me to select Mr. Reeves' method was the term extra-articular, which its originator applied to it. Remembering the impressions I received while a student in reference to perforating wounds of the knee-joint, I could not fail to be attracted by the statement that this cavity was left unopened. I am disposed to think that in most of my own cases the joint was perforated by the chisel, and that the subsequent disruption of the condyle would produce a fracture opening into the joint. It is easy, however, to conceive that the synovial membrane and other intra-articular structures would more easily escape injury than if the point of a saw were repeatedly protruded into the cavity. The laceration of the soft parts which a saw would be likely to produce during its operation, and the increased liability to suppuration in the wound, seemed undesirable. The detritus from the saw, if propelled into the joint, especially appeared to me to be likely to act as foreign matter. I may here mention that I have seen considerable effusion into the knee-joint, and subsequent continued pain and inability to use the limb, in two cases which I have had an opportunity of observing after the performance of Ogston's operation. No such symptoms have supervened in any of the twenty cases in which I have operated by the other method. In a letter from Mr. Reeves to me on the subject, dated October 16, 1880, he states:—"I have operated on seventy-one cases by my method of extra-articular condylotomy. Of these thirty-five were double, and in most of those both knees were operated on simultaneously. The cases were put up in plaster-of-Paris for a week or ten days, and then the patients can semiflex of their own accord, and passive motion is resorted to daily. Listerism was only employed by me in three cases (early ones), as it is not necessary. I have entered the joint in adults, but without the least disadvantage as regards the permanent results. In three cases there was temporary effusion, which rapidly disappeared. I have never known any subsequent joint trouble, and all the cases I have seen

sometime after the operation had perfectly straight and strong limbs, and no relapse. No instruments were necessary."

The method which I have adopted in this operation differs from Mr. Reeves' insomuch as I have always (as far as lay in my power) rigidly adopted Listerism, both at first and in the subsequent dressings, and I have not put up the limb in plaster, but used a straight outside splint, and dressed the wound daily.

I have not (up to this time) operated on any case over eight years old, and have never found it necessary to use the mallet. The chisel here shown, Plate I., Fig. 1, is the original instrument used by Mr. Reeves. Fig. 2, manufactured for me by Mr. Corcoran, Bachelors'-walk, I found preferable, inasmuch as it affords a better grasp, is wider in the cutting edge, and, becoming thickened about half an inch from the edge, acts powerfully as a lever to detach the condyle.

The following are the steps of the operation:—Having anaesthetised the patient and applied an Esmarch's bandage, flex the knee, and map out the condyle for division, by a line sufficiently oblique to allow of the process easily gliding upward on its section. This line (A B, Fig. 3) will nearly correspond to the junction of the inferior fifth of the femur with the inner margin of the ligamentum patellæ, extending into the sulcus between the condyles, and external to the nipple-like elongation of the internal condyle. Having cut down with a scalpel on the internal condyloid ridge at the point indicated, the limb is laid on the outer side on a hard cushion, and the chisel introduced with the necessary degree of obliquity. Having done so, the handle of the instrument is firmly grasped, and, by a sawing movement, pressed onward in the defined direction. Having passed the chisel as far as may be considered necessary, it is not withdrawn, but is impelled anteriorly and posteriorly in the same manner, so as almost to separate the condyle, the detachment of which is completed by using the chisel as a lever, the fulcrum being the shaft of the femur. The limb is now forcibly straightened, and the inner condyle may be felt to glide upward until on the same plane as the outer process, its progress being limited by the attachment of the internal lateral ligament of the knee-joint, which was previously elongated. Sometimes the tendon of the biceps, a band of the fascia lata, or even the vastus externus, may resist the forcible straightening of the limb. A division of these structures should be made, which will give rise to no further complication. The wound should then be

dressed, and a straight splint put on the outside of the limb. Any haemorrhage that may occur is readily arrested by pressure.

The following illustrate a few of the twenty cases I have operated on, and the results obtained. Some of the cases were complicated with a rachitic bend of the tibia, and in consequence—although the malformation of the joint was remedied—the limb, although much improved, was not as perfect as might be desired:—

CASE I.—P. T. (Plate II., Fig. 1), aged three and a half years, had aggravated double genu valgum, was generally rachitic, but the health fairly good. Operated on one knee on Thursday, May 20th. Separated the condyle of the other femur on June 3rd, in the presence of Drs. Hamilton, Torney, Cranny, and Thomson. Used in both instances passive motion in seven days after operation. Photograph, as in Fig. 2, taken three months after operation. There has since been no relapse.

CASE II.—R. G. (Plate III., Fig. 1), aged five years, a healthy-looking little boy, had aggravated double genu valgum. Congenital phlegmisis existed, with an inflamed edge to prepuce, and nocturnal incontinence. I determined to circumcise this child after rectification of the knees, fully endorsing the observations of Mr. Sayre, that aberrant conditions of muscular contractibility in the lower limbs frequently arise from this source. I operated on the right leg of this boy on Thursday, August 5th, and on the left on August 19th, in the presence of Mr. Hamilton, Consulting Surgeon to the Hospital, Messrs. Croly, Cranny, Thornley Stoker, and William Thomson. Eight days after the operation Mr. Croly saw the case, and kindly wrote me the following note:—

“**MY DEAR SWAN,**—I feel great pleasure in bearing testimony to the excellent result of the case of ‘genu valgum’ which I lately assisted you to operate on in the Dublin Orthopaedic Hospital. The deformity was very great before operation, and when I next saw the boy (eight days subsequently to the osteotomy) the limb was so perfect that I could scarcely believe that it belonged to the same child. The case, in my opinion, does much credit to your skill in this important branch of surgery.—Faithfully yours, HENRY GRAY CROLY, F.R.C.S., &c.”

On Sept. 20th the photograph, Fig. 3, was taken. The boy has good use of his limbs. There has been no relapse.

CASE III.—M. L. (Plate IV., Fig. 1), a rachitic subject, aged five and a half years, was operated on, August 26th. Left leg, in which the deformity was more intensified, was first operated on, the right in ten days afterwards. Photograph Fig. 2 was taken on the ninth day after first operation. Result, depicted in Fig. 2, shown one month after second operation.

Plate II

Fig. 1.

THE RECORD
SOCIETY FOR
MEDICAL
OBSERVATION



Fig. 2.



From a Photograph.

THE RECORD
SOCIETY FOR
MEDICAL
OBSERVATION

From a Photograph.

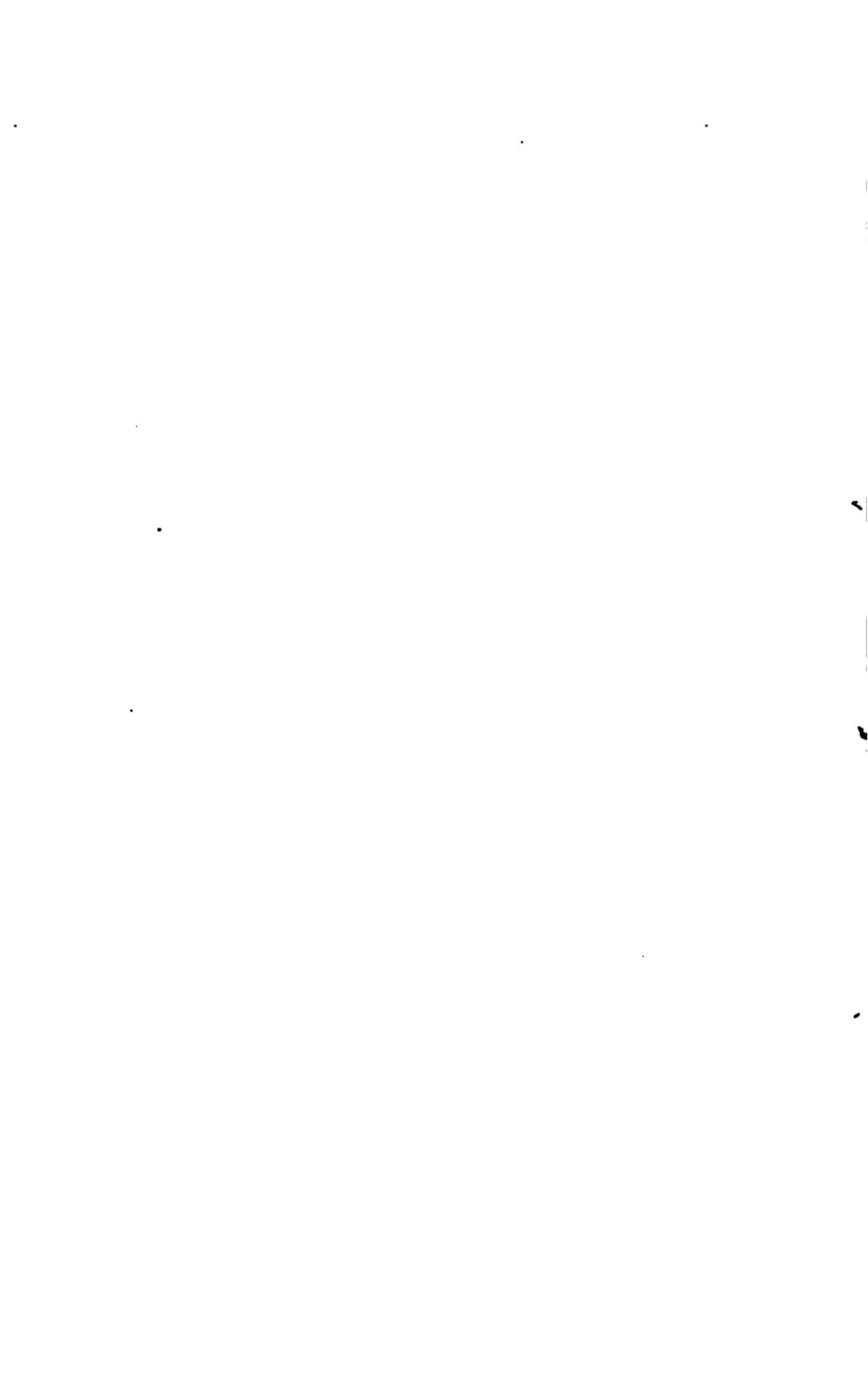


Plate II

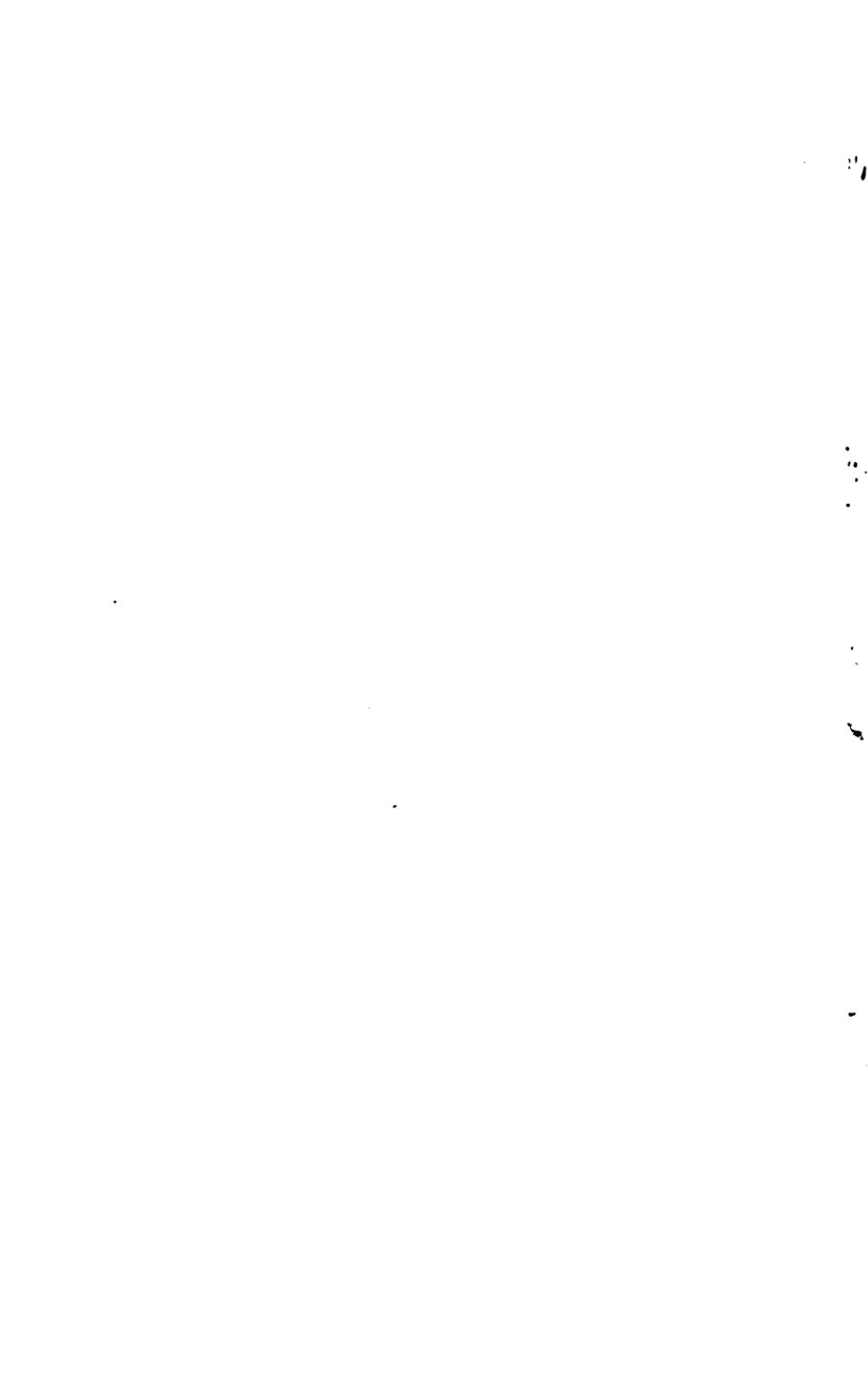
Fig. 2.

Fig. 1.

T. F. Duncani
SOCIETY FOR
MEDICAL
OBSERVATION



Fig. 3.



Plain W.

Fig. 1.



Fig. 2.

THE PLAIN
SOCIETY FOR
ARTIFICIAL
OSTEIRIVATION



Fig. 3.





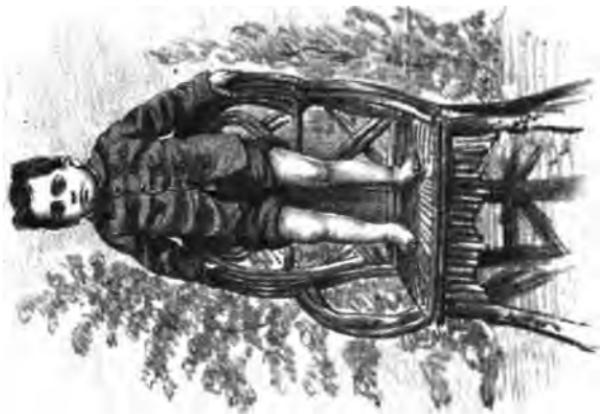
Fig. 1.



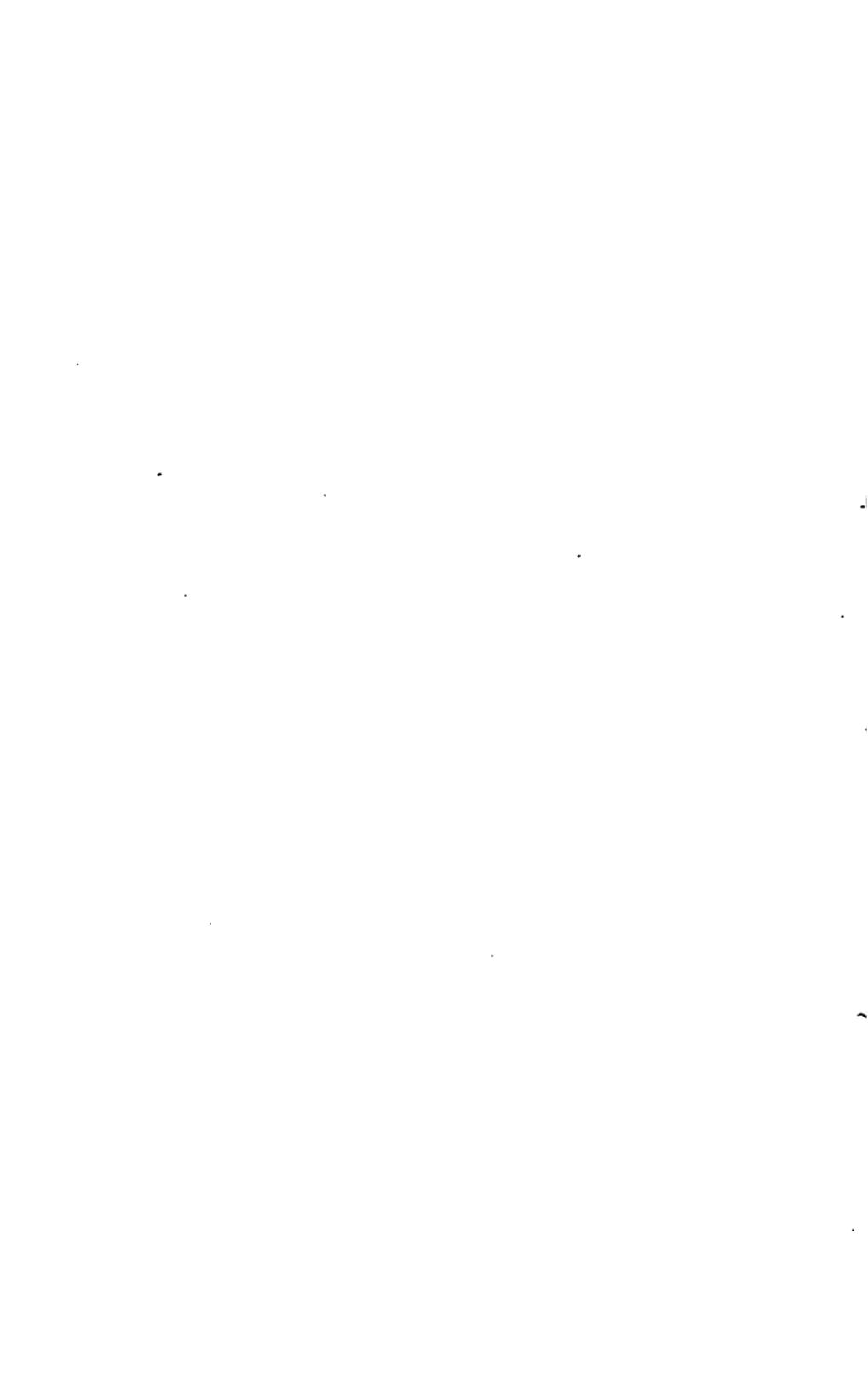
Printed at Photographic

Lithographed by John Palmer Dublin.

Fig. 2.



Printed at Photographic



CASE IV.—Frank H. (Plate V., Fig. 1), aged six and a half years. Operated on at the Dublin Orthopædic Hospital, Sept. 16th, in the presence of Drs. Cranny and Baxter, and Mr. Baird, resident medical officer. The right leg was very much worse than the left, and was selected for operation; the left was reserved for treatment by gradual extension. Fig. 2 shows result of operation on right leg six weeks after operation.

The facts which I have above enumerated will, I trust, show that surgeons have at their disposal a certain means of rectifying the most serious and intractable forms of genu valgum, and that the operation is a legitimate one, inasmuch as it does not impose an unjustifiable risk on the patient. I have endeavoured to divest the surgical procedure of the epithet "heroic."

ART. XVII.—*Enteric Fever; Remarks on its Diagnosis.** By WALTER BERNARD, F.K.Q.C.P., Londonderry; late Principal Medical Officer, 3rd Division Army Works Corps, Crimea.

Importance.—The solution of the problem of the diagnosis of enteric fever is so frequently forced upon us in practice that it demands our best and most careful consideration. Although much has been written on this subject, I hope that these few remarks will prove useful in eliciting some practical hints from those who are continually engaged in fighting at the bedside with this fatal malady. I have been induced to bring this paper before your notice not only from the importance of the subject, but also from the confusion which appears to exist in the diagnosis and nomenclature of acute febrile states. The importance of the subject cannot be over-estimated, and is well known to us all. I shall briefly show how important the subject is with regard to the prognosis and treatment. On many occasions the lives of our patients depend on our recognition of the mildest forms of the disease. When we are sure we have typhoid to deal with, we strictly enjoin rest, and put in force necessary prophylactic measures. If we fail to recognise the disease and allow our patient to go about, we may be undeceived by the occurrence of perforation or haemorrhage, for it is a notorious fact that the severity of the general symptoms is by no means in proportion to the severity of the intestinal lesions. Almost every practical physician has met with cases of this kind.

Difficulty.—The difficulty of the subject is in proportion to its

* Read before the Medical Society of the King and Queen's College of Physicians, Wednesday, November 8, 1880. [For the Discussion on this paper, see page 522.]

importance. We are all aware that under this head there are included some of the most difficult questions in the practice of medicine. Whether we look at the mild or at the severe forms of the disease we encounter difficulties, and in some cases we are reluctantly compelled to confess that it is impossible to be certain of the nature of the disease we are called upon to treat. With our present knowledge, however, we are able in the vast majority of cases to arrive at an accurate diagnosis. In some cases we can only interpret the phenomena before us after a considerable time has elapsed, and not till we have carefully reflected on what we have observed. The difficulties of diagnosis arise from the fact that typhoid exhibits many protean forms and closely resembles many other morbid states.

Former History.—A superficial glance at the progress of our knowledge will show that one error into which practitioners fell is now for the most part removed. The term "enteric fever" has been used in too limited a sense—in other words, enteric fever in some of its protean forms has not been recognised as such, and it has been classed under the head of some other disease. Many cases which some years ago would have been classed under the heads of "simple continued fever," "low fever," "worm fever," "infantile remittent fever," "gastric fever," "biliary fever," "brain fever," and such like, would now be placed under the head of enteric fever.

Error of present time.—At the present day I think we err in using the term typhoid to include too many acute febrile states. It is in this direction that I look with confidence for improvement, and I have no doubt that accurate clinical observation, along with careful *post mortem* examinations, will at some future time add one or more names to our list of fevers. We have already some evidence of this change. Zenker, in the year 1860, proved by *post mortem* examination that a patient who was supposed to have died from typhoid really suffered from trichinosis. An attempt has been made by our Registrar-General (Dr. Grimshaw) to show that many cases of the so-called typhoid are really cases of acute gastro-enteric catarrh. Although I am not prepared to deny the existence of the "*febris gastrica*" as an independent disease, still I think it is impossible with our present knowledge to distinguish between this disease and mild cases of typhoid. Cases occur during endemics of typhoid which exactly answer to Dr. Grimshaw's description of acute febrile gastro-enteric catarrh. It is to be regretted that in those cases no notice has been taken of the size

of the spleen. Again, we know that many high authorities do not regard the well-known outbreak at the Clapham School as typhoid, but as some other disease—still unnamed—produced by sewage. Further evidence of this change can be obtained from cases of prolonged febrile states, which are sometimes met with in practice. These cases do not exhibit any of the marked symptoms of typhoid, but by the method of exclusion are put down as examples of the disease. It is not improbable that many of these cases arise from a cause quite different from the specific poison of typhoid.

Temperature.—The thermometer, one of the most useful of our instruments, is invaluable as an aid in diagnosis. Our study of the temperature chart will, in many cases, if no active antipyretic treatment has been adopted, suffice to show that the case is one of enteric fever. The presence of pyrexia will at once enable us to exclude from our diagnosis such affections as mania, or a bilious attack, which are occasionally confounded with typhoid. It has been proved beyond all doubt that a patient may pass through typhoid without his temperature rising above normal.* This fact is sufficient to show that we must accept with reserve the statement that enteric fever should be excluded from the diagnosis by a temperature approaching to normal any evening during the first week. Wunderlich says that if the maximal evening temperature does not reach 103° we may exclude enteric. Jenner and Murchison have shown that this law is unreliable; and we have abundant evidence of this in the occurrence of cases of non-febrile typhoid. It has been laid down, and it is true in most, if not in all cases, that we may exclude any case in which a temperature of 104° is observed on the first day or second morning of the illness.

Mild Typhoid.—Mild cases of typhoid, typhus, simple continued fever, and febrile gastro-enteric catarrh, may present to us exactly the same clinical phenomena. Light will sometimes be thrown on these obscure cases by careful attention to the aetiology and history. It is well to remember that the poison of typhoid, even in its mild form, has a peculiar elective affinity for the spleen. Unfortunately many other diseases produce enlargement of the spleen, and it is not easy to satisfy ourselves in all cases that there exists slight enlargement. If, however, we can detect enlargement we have strong

* Cayley says (Croonian Lectures, British Medical Journal, April 3, 1880, p. 505):—“Many cases, and even epidemics, of typhoid have been met with in which the temperature has been subnormal throughout the whole course of the disease. One such epidemic has been reported by Dr. Strube.”

presumptive evidence that we have to do with typhoid. In many cases of typhoid there is a premonitory stage—a stage of gastro-intestinal catarrh*—before the invasion of the disease, which is known by the occurrence of rigor and rise of temperature.

Typhus.—The labours of Stewart, Jenner, and others, have been so fruitful in their results, that little difficulty is now experienced in distinguishing between enteric and typhus fever. The rash of typhus occasionally, when discrete and in its earlier stages, resembles an abundant typhoid eruption; but when we take into consideration all the other phenomena we seldom have any great difficulty in arriving at a precise diagnosis. It sometimes happens that cases of fever are not seen till what is called the typhoid state is present, and it may be most difficult to determine, in the absence of eruption, whether the cause of the condition is the presence of the typhus or typhoid poison. The previous history will, if it can be obtained, set the matter at rest. It is important to remember that the rash of typhus can sometimes be made visible by the use of the cupping glass. For this observation we are indebted to Dr. Hudson. Those cases in which the poisons coexist are very perplexing.

Septicæmia.—In many cases of typhoid fever septicæmia is super-added to the original fever. Hence there is often great difficulty in distinguishing between septicæmia due to other not easily recognised causes and that due to septic matter from typhoid ulcerations. Murchison says that many cases of septicæmia, due to caries of the temporal bone, resemble closely enteric fever. In cases of this kind, where we cannot find any cause to account for the symptoms, we are perhaps too ready in making typhoid a symptomatological scapegoat. The occurrence of septicæmia gives an explanation of those cases of typhoid of very prolonged duration, but will not, I think, altogether explain the fact that typhoid terminates by lysis. In cases of short duration, in which ulceration may be supposed not to have taken place, the fever as a rule terminates by lysis.

Tuberculosis.—Acute tuberculosis, whether pulmonary, meningeal, or abdominal, so closely resembles typhoid as often to tax the skill of the most accurate observers to the utmost. In cases of difficulty the family history and aetiology will often afford much help. Those who are familiar with the use of the ophthalmoscope have a great advantage in the investigation of these cases. Tubercles, as a rule, are developed in the choroid coat in cases of acute

*The word catarrh is used by some writers to signify affections depending on exposure to cold, while other writers use it in a much wider signification.

miliary tuberculosis, in some cases of phthisis, and rarely in tubercular meningitis. In acute phthisis Wunderlich and others have shown that the pulse-temperature ratio is greatly disturbed, and in difficult cases the knowledge of this fact may occasionally enable us to arrive at a right diagnosis. I know of one instance where considerable doubt existed as to whether the case were one of acute phthisis or typhoid fever, in which the anxiety of the medical attendant was entirely removed by the occurrence of malaise and gastro-intestinal catarrh, without diarrhoea or any other distinctive marks, in a member of the same family. This occurrence turned the balance of the evidence in favour of typhoid, and the result fully justified the decision. In his "Clinical Notes" Dr. Wilks remarks that it is often rather from a contemplation of the case from its commencement to its termination, and the surrounding circumstances, that the conclusion is arrived at. Dr. Waters, of Liverpool, has shown that in cases of phthisis the temperature, as a rule, attains its maximum about 5 p.m., and that in enteric fever the temperature is higher at 9 p.m. than at 5 p.m.

It is well known that we may have all the symptoms of tubercular meningitis present in typhoid, even those which are held to be very characteristic of the former affection, as hydrocephalic screams, cerebral maculae, and strabismus. In some of these cases of extreme difficulty we must content ourselves to remain in doubt until *post mortem* examination solves the problem. On this subject Dr. Hudson says:—"One sign, I think, you will find all but unerring when present, as it is peculiarly characteristic of cerebral mischief—I refer to that deranged condition of the circulation, in which we meet with a jerking impulse of the heart, with irregular intermittent pulse, of unequal volume, and uncertain rhythm."

Local Diseases.—Sometimes, especially in children, it is difficult to come to a conclusion whether the pyrexia is due to some local affection (*e.g.*, intestinal irritation, enteritis, pneumonia), or whether it is primary. The greater prostration, the presence of spots, the peculiar range of temperature, the enlargement of the spleen, the occurrence of headache and epistaxis, the pea-soup alkaline stools, the gurgling in the right iliac fossa, will show that we have typhoid to deal with.

Treatment is sometimes of value in forming a diagnosis:—(1.) A small dose of castor-oil will often, in a doubtful case, produce a characteristic motion. (2.) Quinine, as an antipyretic agent, has much influence in typhoid, whereas in tuberculous affections it has

little or no effect. (3.) Sometimes in children we observe pyrexia with gastro-intestinal disturbance, which, although closely resembling typhoid in many of its symptoms, is very amenable to treatment. A powder of rhubarb and sulphate of potash, given once or twice daily, has a wonderful influence over this affection, and by this means we are able to distinguish it from typhoid.

The knowledge of the laws of diagnosis, and the errors likely to be made, may be called the mechanical part of diagnosis; but over and above this there is a knowledge which cannot be communicated from one individual to another, and which is possessed in varying degrees by different observers. We often reason from particulars to particulars without being able to express in general terms our experience. There is much wisdom in the lines—

“Whose old experience doth attain
To something of prophetic strain.”

**ART. XVIII.—*Anomalous Fever Cases.* By THOMAS DRAPE,
M.B., Enniscorthy.**

IN the practice of every physician anomalous cases of fever from time to time occur in which diagnosis finds itself sadly at fault—cases in which it is difficult, perhaps impossible, to carry out the injunction of a sometime famous nurse, “Give it a name, I beg.” A sharp contention has been for some time waged, and even still the flame of controversy flickers, around what appears to be a new importation into these islands within the last few years, the disease called “rōtheln”—some practitioners (I believe I am right in saying the great majority) regarding it as a distinct and specific exanthem, while others still prefer to consider it a hybrid, or some modification of either measles or scarlatina. Many of us, no doubt, can recall the uncomfortable state of uncertainty in which we found ourselves over our first case or cases of “rōtheln,” and how, on being questioned, our ingenuity was taxed to give a properly ambiguous reply. Happily in this instance, under the “fierce light” of multi-form opinion, and chiefly by the aid of our Continental and American brethren, a problem, dubious at first, appears to be approaching a tolerably satisfactory state of lucidity. In other instances, however, such a result not unfrequently is sought for in vain. This, of course, more often occurs in isolated cases of disease of which only one specimen presents itself, than in the case of a disease like rōtheln which affects numbers of individuals. By way of example, I may

refer to a case which was brought forward by Dr. Nixon, and afterwards discussed at a meeting of the Dublin Pathological Society, as mentioned in the report which appears in the October number of this Journal, and respecting the nature of which highly competent medical men arrived at widely different conclusions—opinion being divided as to whether it was a case of cholera, scarlatina maligna, or enteric fever. That the two last-mentioned diseases might be readily confounded under certain circumstances in their early stages, and also that they have a close affinity in their aetiological relations, was shown in a case which occurred in my own practice, a short account of which may not be devoid of interest. Had not the patient fortunately survived, so giving the disease time to declare itself, another "anomalous case" would probably have been recorded in my note-book:—

In August, 1878, I was attending a well-marked case of enteric fever, the subject of which was a young man in comfortable circumstances, who lived on his farm, which was of considerable extent, and occupied an elevated position on a kind of table-land above the valley of the Slaney. This case was unmistakable, its nature being evidenced by the characteristic diarrhoea, rose-coloured spots, tenderness, and gurgling in iliac fossa, and terminated fatally after three weeks, death being hastened, if not caused, by congestion of the lungs coming on at the close.

On the morning of August 7th, when paying my usual visit to this young man, I was asked to see his sister, aged nineteen, whom I found in an adjoining room very ill indeed. Her sisters and the nurse stated that the day before she was perfectly well, and ate her dinner. Soon after, at 2 p.m., she was seized with sickness of stomach, green vomiting, and green stools; headache and delirium rapidly followed, and she was going about the house "as if she was mad." Simultaneously with the sickness, the nurse stated, a red rash, "like measles," came out all over her, and remained out some hours.

Her condition at my visit was as follows:—Temperature, 105·6°; pulse, 160. She wanted to get up out of bed while I was examining her—in fact, she appeared as if she did not know what she was doing, quite dazed. Tongue whitish in centre and inclined to be dry; redder, but not perfectly clean at edges and tip. Great thirst; no tympany; slight tenderness in right iliac fossa. A motion which I saw consisted of a thin dirty fluid, with greenish shreds floating in it. Severe headache; pupils natural; one or two rose-spots to be seen on abdomen. Respirations, 60; no morbid lung-signs. Since she was attacked, up to the time I saw her, nothing remained on her stomach.

Ordered—Brandy, in teaspoonful doses, with soda water, and small

quantities of boiled milk; mustard to epigastrium; an effervescent mixture, containing ammonia carb. and small doses of morphia, and with second dose of mixture, grs. xx. of quineti sulphas; feet and legs to be steamed with vinegar cloths round hot jars.

At 6 p.m. I saw her, with Dr. Boxwell, of Wexford. The vomiting and diarrhoea had ceased. Since morning visit the nurse states that she got "quite black," especially her hands and nails; that her pulse went, and that she only kept her alive by sprinkling her with cold water, and applying mustard and turpentine to different parts of the body. Temperature, 105°; pulse could not be felt, except a mere flicker. Eyes congested. On speaking to her loudly she opened them and looked stupidly at us, but would not put out her tongue or speak. First sound of heart inaudible; the only thing heard was a series of clicks in rapid succession, which evidently corresponded to the second sound. Face pale.

After a few moments consultation—time was precious and we expected a rapidly fatal issue—it was decided to give her the chance of a cold affusion. The hair was removed, her head and shoulders brought out well clear of the bed, and two or three jugfuls of cold water thrown over her. This was followed by an immediately favourable result. She answered when spoken to and said she was frightened, put out her tongue readily, and then seemed inclined to fall off into a somnolent state.

Ordered—Turpentine to chest, front and back; 3 ss. of brandy every half-hour, and an ammonia and bark mixture; also blister to nape of neck.

At 11 p.m. I saw her again and found her somewhat improved. The pulse could be counted, 160, but only the merest thread; temperature, 105.8°; respirations, 36; answered a little when spoken to; but as she seemed inclined to relapse into lethargy, I repeated the cold affusion on her head, which, this time, she violently resisted.

August 8th, 10 a.m.—Temperature, 101.2°; pulse, 136; respirations, 36; pulse of considerably more volume; one motion during night; intelligent. 7 p.m.—temperature, 102.8°; pulse, 140; respiration, 44; tongue red at edges, heavily coated with thick dry cracked saburra; intellect clear on addressing her; said she was better, and that we had "cut her head," but remembered nothing of last night. Some gurgling and tenderness in right iliac fossa; one motion, buff coloured, clear fluid on the top, more solid part subsiding. To continue mixture; 3 ss. of brandy every two hours; beef tea, one tablespoonful hourly; milk.

August 9th, morning.—Temperature, 100.8°; pulse, 124; respirations, 36; no motion since; tongue nearly clean; throat sore and fauces congested; a bright scarlet rash on feet and legs, up to two or three inches above knee, also on back of hands; diffused redness over chest, but this may have been produced by the turpentine; slight gurgling still in iliac region. Brandy reduced to two teaspoonfuls every second hour; poultice throat.

From this on she made a rapid recovery—two days after, on the 11th, being almost convalescent. Temperature, 99·5°; pulse, 85; feeling well, and wishing for food.

On making inquiries no case of scarlatina could be discovered in the neighbourhood, nor was it prevalent at the time. There had been no illness in the house for years until these two cases occurred, so that direct infection from a similar case may be excluded as a cause for the girl's illness, which, I think it can hardly be doubted, was a genuine case of scarlatina.

With respect to sanitary surroundings there was the usual farm-yard in close proximity to the back of the house, well furnished, of course, with manure and offal of various kinds, which, however, do not appear to be very provocative of zymotic diseases, judging from the comparative immunity of the farming classes from these affections. But there was one institution in the yard which, it is more than probable, was the *fons et origo mali*. This was a pump, the water of which was sensibly contaminated by the sewage from the cow-houses, pig-styes, &c. Although they stated they did not use this for drinking purposes, they admitted they sometimes made tea with it, and if this was done, as it probably was, to save the trouble of bringing water from a greater distance, it is not at all unlikely that they may have taken occasional draughts of it, if none of the good water was at hand.

This case presented some curious features. Had it ended fatally during the first forty-eight hours it would not have been an easy matter to decide what cause of death to assign in the certificate. My own opinion, expressed at the time, was that it resembled more the onset of scarlatina maligna than any other disease; and had there been no other case of illness in the house, I should probably have given that opinion without much hesitation. But the fact of a case of enteric fever already existing under the same roof, and that this case presented some symptoms uncommonly like those of enteric fever—viz., diarrhoea, iliac tenderness and gurgling, and a few rose-spots on the abdomen—naturally created some doubt as to the nature of the case, and, moreover, after the initial diarrhoea, which, as well as the vomiting, was green, the motions had almost an identical appearance with that of typhoid stools. Was it, then, a fever of "mixed" character? It is possible that this patient may have imbibed the germs of both diseases—if there be specific germs peculiar to each—and that one disease aborted, while the other went on to its full development. At a meeting of the Pathological

Society of Dublin in the year 1878, Dr. Nixon exhibited specimens from the body of a girl who died from what appeared to be a combination of these two diseases, there having been scarlet rash, sore throat with subsequent diphtheritic exudation, and after death Peyer's patches were found to be engaged, and "the characteristic appearances of *psorenterie* were also observed."^a But on reviewing all the circumstances, I am inclined to think that this is not the true explanation of what occurred in the case I have related. That we need not resort to it will, I think, be conceded from consideration of the fact that cases of scarlatina do occur of an abdominal type, in which entero-colitis is a prominent feature, and diarrhoea, vomiting, and abdominal tenderness concomitant symptoms—so much so that, as mentioned by different authors, they mask the true scarlatinal character of the disease, and have been mistaken for symptoms of enteric fever, especially when, as not unfrequently happens in such cases, no rash appears. And in many cases of undoubted scarlatina, *post mortem* examination reveals engorgement or other pathological change in Peyer's patches and the solitary glands of the intestine. Disregarding then the idea of a double infection, to what are we to look as the essential cause of the gastro-intestinal symptom at the commencement of this and similar cases? In malignant scarlatina the citadel is, as it were, at once attacked and overpowered, and this is frequently the signal for a general capitulation of the remaining forces. The poison produces its profoundest effects on the central nervous system, as evidenced by high temperature, violent headache, delirium, somnolence, cyanosis, extreme cardiac debility, pointing to implication of the centres of the vagus. When diarrhoea occurs under these circumstances, Dr. Henoch, of Berlin, who has made very careful observations in this disease, considers it due to paralysis of the splanchnic nerve, caused by the contagious matter^b—a highly probable supposition. There is, however, another aspect in which we may regard these symptoms, which we would do well not to lose sight of. It is not unreasonable to regard such phenomena as vomiting and diarrhoea as efforts at elimination. If there be, as undoubtedly there is, a profoundly disturbed condition of the nervous system, there is at the same time a highly contaminated condition of the blood. In fever the zymotic influence, which seemed to be actively at work until it has ex-

^a British Medical Jour.

^b British Medical Jour.

capable of responding to such influence, has its accomplished work in what may shortly be described as a septicæmic condition of the blood. This condition must terminate in one of two ways—either the vital fluid is so decomposed—devitalised—that it can no longer minister to the requirements of the body, all function is interfered with, and death results; or an outlet is obtained for the poison through one or more of the emunctories of the system. We know how constantly septicæmia provokes eliminative efforts on the part of nature, which at one time selects this, at another that, excretory organ. In a case of septicæmia following a too prolonged sojourn of a bougie in a strictured urethra which came under my notice, and which I published in *The British Medical Journal* some time ago, a case which nearly proved fatal, elimination appeared to take place by means of persistent green vomiting, and profuse herpetic eruption on the ears and back of the head. May we not then regard the vomiting and diarrhoea which occurred in this case of scarlatina as efforts at elimination? The fact that the diarrhoea ceased from the time the rash appeared, the throat at the same time having become sore, would seem to indicate that such unusual routes of elimination were no further needed, the disease having, as it were, secured its natural outlets. Diarrhoea being a common accompaniment of the invasion of malignant scarlatina, it would be a matter of no small moment to be in a position to decide upon what, as a rule, it depends, for it is impossible to adopt therapeutic measures with anything like definiteness of aim and clear prospect of success while unable to make up our minds with respect to conflicting theories as to the nature and origin of symptomatic phenomena. In this particular instance it appears to me the choice lies between two—that of Dr. Henoch, that the diarrhoea is due to a paralytic condition of the splanchnic, and the elimination theory. If the first be correct, purgative medicines would be likely to be useless, if not pernicious; if the latter, they might possibly be beneficial. Hence, probably, Rousseau was not averse to giving moderate doses of mercury and saline aperients in this disease. And although diarrhoea is considered an unfavourable symptom, for the simple reason, probably, that it is usually seen to accompany the more serious forms of disease, still it is a question whether without it they would not be still more serious, inasmuch as the evacuations may assist in carrying off no inconsiderable amount of poison.

I think, we may regard as certain, that in the case

related cold affusion saved the patient's life. She was moribund when it was first applied, and each time it was resorted to the result was salutary in an almost startling degree. This corroborates the opinion—if it needs corroboration—sanctioned by many high authorities, that whenever the great nerve centres are overpowered by a morbid poison, the remedy *par excellence* is cold affusion. In cases such as this one, where these centres are rather surprised than completely overwhelmed, and where they are apparently in a condition of unimpaired integrity almost up to the very onset of the attack, we may look for a hopeful result from this treatment; but even in the coma of advanced typhus fever it is a powerful stimulant and restorative, and I have seen patients in this state rapidly recover consciousness when two or three jugfuls of cold water were thrown over the head and shoulders. Although not aware of it being a recognised treatment, I do not see why it might not be used with benefit in the coma of uræmia, as an auxiliary measure, with the object of arousing nervous energy sufficient to keep life going until purgatives, diuretics, &c., should have had time to act.

As to how the two diseases occurred in different individuals under the same roof, without any discoverable source of infection, except that of impure water, I am unable to offer any explanation.

There is an opinion which finds currency—that the same infective source can give rise to different and distinct diseases in different individuals, according to their susceptibilities and peculiarities of constitution, producing in one typhoid, in another scarlatina, in a third diphtheria, and so on—that there is, as it were, a septicæmic substratum common to all these septic diseases, the ultimate evolution and development of which is determined by individual idiosyncracy. This view, of course, militates altogether against the “germ theory” of disease, but labours under the disadvantage of being *not proven* in any particular case. It is next to impossible to demonstrate the absence of different specific germs in any infective medium—they are too subtle not to elude the most vigilant scrutiny—whereas there is strong evidence that, at any rate, in the case of *some* diseases a certain specific germ, and no other, is capable of exciting them. Recent experiments of Koch, Pasteur, and others (as related by Prof. Lister at the annual meeting of the British Medical Association) on such diseases as splenic fever, anthrax, cholera des poules, &c., throw a flood of light on this obscure question—a question which, let us confidently hope, awaits its final solution in the medicine of the future.

ART. XIX.—*Continued Fever as met with in Calcutta, and its Treatment.* By ROBERT F. DEDRICKSON, L.R.C.P., Edin.

DURING the months of March, April, and May, and less frequently in June and July, continued fever is very prevalent among the shipping in the port of Calcutta. When we consider the life of those that live on board ship we will at once understand why this is so. A fever that is known to be caused by vicissitudes of temperature, excessive heat, intemperate habits, and exposure to the moist night-air of the above months, at once gives us the clue; since sailors, in nine cases out of ten, suffer from each one of these exciting causes. The most common cause, however, is, I believe, exposure to excessive heat. This may be either direct or indirect. Directly, for instance, when men are sent during the noon and midday heat to scrape the ship's side or to repair rigging aloft, and are thus exposed to the direct rays of the sun; and indirectly, by sleeping in a close and confined bunk in an ill-ventilated iron ship that has been seething hot all day, and reaches its internal greatest heat but a short time before the men retire to rest. It is much to be regretted that some rule is not made imperative that Europeans be not employed in exposed positions about the shipping during the hours of say from 10 a.m. to 4 p.m. daily. But, while taking all this into consideration, we must not forget that sailors are most improvident men, and, as a rule, most reckless and careless with regard to their health, preferring to squander their money in excesses to providing themselves with clothing suitable for warm climates.

"Continued fever" consists of febrile symptoms, which last from twelve to thirty-six hours, or sometimes even from five to six days. The temperature varies from a shade above normal to 103° or 104°; but if it goes beyond 104°, or even remains at that elevation over four days, the fever is accompanied with one of its serious complications—high temperature. Thus the symptoms are—increase of temperature, pungent dry heat of the skin, the pulse is frequent and full, there is headache (sometimes intense), the tongue is coated with a white fur, the breath smells excessively unpleasant, there are pains in the bones and small of the back, the bowels are confined or are very loose, there is loss of appetite, the face is flushed and the eye congested, and there is total disappearance of prickly heat, which remains absent till the fever has departed. If a man suffering from this fever is asked what he complains of he is almost certain to

answer, "a pain down the back and in the loins, a severe headache, and no appetite." He will frequently express his feelings by saying he feels "sore all over," just as if he had received a good beating. The following is a typical case:—

CASE I.—John T. complained on Monday of pain in the back and severe pain in head; bowels not opened for two days; tongue coated with white fur; feels ill all over; thinks he has got the fever and ague; temperature in axilla, 102° ; skin hot and quite dry; pulse, 120; complains of great thirst; remarks that "prickly heat," from which he had been suffering so much, has quite gone.

Tuesday.—After taking four doses of salicylate of soda, says he has perspired a little during the night, but feels worse; his bones are all sore, and he feels quite sick in stomach; temperature, 101° ; pulse, 110. To continue the salicylate for twelve hours more.

Wednesday.—Has perspired freely during the night; his skin is quite cool and moist; temperature, 98.4° ; pulse, 90; no headache; says he feels slightly better. Ordered to take three doses of sulphate of quinine, at twelve, four, and eight o'clock, of five grains each; to take a tablespoonful of castor-oil in the morning. After this he mended rapidly, being quite restored to health at the end of eight days.

This case is a very fair example of continued fever in its mildest form. It is a curious fact, yet one that I have very frequently and carefully noted, that as the fever lessens and there is a well-marked improvement in the patient, he is certain to inform you that he feels much worse; that he has pains in all his joints, and this even when the fever may have quite disappeared.

Now a few words with regard to the treatment of this simple continued fever before I go on to its complications. The first point to be considered is the reduction of the temperature, and one of the best medicines with which I am acquainted for doing this is certainly the salicylate of soda, given either in 10-grain doses every third hour till profuse sweating occurs, or in one or two large doses. There is now prepared an aerated water, each bottle containing 120 grains of salicylate of soda, of which the patient may take half, and the remainder in three hours should the first dose fail to excite sufficient sweating. It has the advantage of being agreeable to the taste, and may be iced before using. It is well to mention here that very alarming symptoms are sometimes produced by a single large dose of this drug, but there is no real danger. However, it behoves one to be on their guard, and it is a wise rule to see a patient at least four hours after taking a dose of

60 grains. The symptoms that it produces are—flushing of the face and noises in the ears, wandering of the mind, and often even stertorous breathing. These all, however, usually pass away rapidly. I have never seen any alarming symptoms by giving the drug in 10-grain doses every three hours, and it is in this way that I recommend it in treating fever with a temperature under 103°. I have found by this treatment that the fever is abated in from twelve to thirty-six hours, and as soon as the temperature is normal it is well to stop the salicylate, and give three 5-grain doses of quinine, which may be continued for a few days till the patient's health be quite restored, paying attention at the same time to the secretions, giving castor-oil purges if there be any necessity. The diet all through should consist of that most easily assimilated—such as chicken-broth, sago, vermicelli, and rice. The stomach is usually in a weak state, and it may be necessary after the fever is over to give infusion of calumba combined with nux vomica to restore it to vigour. The pains which are frequently left after the disappearance of the fever will be often the symptoms which the patient will complain most of. I have found a liniment composed of equal parts of aconite, chloroform, and opium, well rubbed into the painful parts night and morning, most effectual. On this failing to give the relief sought, it is well to administer hypodermically from the one-fourth to half a grain of acetate of morphia with the $\frac{1}{20}$ of a grain of atropia at bedtime for a couple of nights. This will hardly fail to give relief.

I shall next proceed to the consideration of what may be called the complications of continued fever. The most frequent one I have met with is high temperature. I have before mentioned that when the temperature exceeds 104°, or remains at that elevation for over four days, it is a very serious complication. It is such cases that will usually be found to have been brought about by direct exposure to the rays of the sun, and are what may be termed a "touch of the sun." Indian residents who have gone to Europe to recruit their health frequently state that they have had sun-stroke. If these cases are carefully inquired into it will most likely be found that the case was one of this continued fever with high and lasting temperature. It is in these cases in which there is incessant and almost unbearable headache all over the head, but with its greatest intensity referred to the temples. Patients will describe this pain as though their head was bursting open; that they felt continued throbbing and thumping in the temples; that

their head seemed to be filled with water, and that they could hardly move it from side to side, it seemed so heavy. Very frequently there will be wandering of the mind, which the patient may be aware and complain of. The face is deeply flushed, and the dry burning heat which is met with in simple continued fever is here much intensified. This fever is very common in intemperate people, and very fatal.

I will now quote a case which I met with a short time since, though the temperature did not quite reach 104°:-

CASE II.—W. B., a clerk in a merchant's office in Calcutta, not more than a year from home, consulted me for what he described as a bilious attack. On my taking his temperature I found it to be over 103°. I sent him home, having ordered a diaphoretic mixture, to be taken every third hour. On my calling to see him next morning I found the skin had not acted; temperature still over 103°; feels very drowsy, dropping off to sleep every minute. Ordered to take ten grains of salicylate of soda every three hours. On my calling to see him next day I found him on his back in bed, perfectly unconscious, with stertorous breathing, livid in the face, the temporal arteries and jugular veins standing out in bold relief. Quinine was administered hypodermically, but with no benefit; and in less than an hour from the time I arrived he expired.

The points of interest in connexion with this case are that he had probably been suffering from fever for six or seven days before he consulted me; during the time he had what he called a bilious attack, and from some cause unknown he had not taken the medicine I ordered containing the salicylate of soda. It was also a serious case (though the temperature was not extremely high), as showing two facts which are worth remembering—the complaint of excessive drowsiness (which is always a serious one), in common with a weak circulation. I heard after his death that even during the hot season he had to have his feet covered, as he was constantly complaining of the coldness of his extremities. This was a case probably of fever of the duration of ten days, and for the last three days he was under my observation he had a temperature of over 103°. Now, with regard to the treatment of this high temperature, it is so necessary to cause its sudden reduction that it is hardly to be thought of giving any medicine that will require hours to act. Hence here we must give the salicylate of soda in a large dose, say of 60 grains, and repeat that quantity in an hour if the first dose has not caused a well-marked reduction in temperature—say at least a degree. Quinine in large doses of from

20 to 30 grains will also be found very useful in these cases. The great disadvantage it has is its liability to cause vomiting, but if a patient can retain 20 grains of the drug a speedy and well-marked reduction of temperature may be looked for almost with certainty. Some time since I saw a patient at seven o'clock p.m. with high fever, temperature 105°, bounding pulse, and other serious symptoms. The only drug available was quinine, of which I gave him 15 grains, and repeated it in two hours. Both doses were retained, and on my visiting him next morning he was almost well, temperature being quite normal. Quinine may also be administered hypodermically, and in this way is sometimes of great benefit. I think it is well to administer with each hypodermic from the $\frac{1}{15}$ th to the $\frac{1}{50}$ th of a grain of atropia, as it tends much to stimulate the heart's action, which is mostly very weak; and as we know that quinine even in small doses will cause irregularity often in a healthy heart, it is well to guard against this, and atropia is the most suitable drug under the circumstances.

Ergot of rye is also a most valuable medicine, not only in its action as a diaphoretic, but by its well-known power of diminishing the calibre of the blood-vessels supplying the brain. This action alone should point out its great worth in these congestive fevers, and I have frequently tested its value.* It is the best medicine I know for relieving the violent pains in the head and reducing the throbbing of the temporals which is sometimes so violent in this fever. It may be given in doses of from half to one fluid drachm of the liquid extract, or administered hypodermically in the form of a solution, made by dissolving 4 grains of Bonjean's ergotine in 30 drops of water and adding a few drops of glycerine. Of this solution 20 to 60 drops may be injected, and repeated hourly till relief is obtained.

Continued fever is sometimes accompanied with diarrhoea, which may be the symptom for which the patient will consult you. I have noticed it is only in the mild cases of the fever that it is met with—indeed I am inclined to think that it acts rather beneficially if it be not too violent. It appears to relieve the head symptoms, and by reducing the volume of blood prevents the fever taking on a congestive action. Its treatment is simple. An ounce of castor-oil with 15 drops of laudanum will usually check it after two or three motions. If this should fail, I have found 10 grains of

* Cf. Paper on Treatment of Heat Apoplexy by same author. Dubl. Journ. Med. Sci., Oct., 1878.—ED.

Dover's powder, combined with 20 grains of the aromatic powder of chalk taken immediately after a motion, and repeated if required after two hours, very successful.

In bringing these observations on the continued fever of Calcutta to a close, I wish to state that my inferences have been drawn from observation of the disease as met with in Calcutta, and that mostly among the shipping; and that, though I am well aware of the many other methods of treating the fever and of reducing high temperature, spoken so highly of and probably with justice, I refrain from making mention of any other means than those that have proved most successful in my hands.

PILOCARPINE AND JABORINE.

DRS. HARNACH and MEYER (*Liebig's Annalen der Chemie*, Band 204, Heft 1, July 31, 1880) have examined the chemical and pharmacological properties of commercial pilocarpine, and the result of their researches has led them to the conclusion that a new alkaloid, which, in lieu of a better name, they have called "jaborine," is contained, together with pilocarpine, in pilocarpine of commerce, jaborine being, in fact, formed out of pilocarpine. According to the authors, pilocarpine is in its physiological effects analogous to nicotine, while the effects of jaborine they found to be identical with those of atropine. The separation of jaborine and pilocarpine is based upon their different degrees of solubility in various menstrua, the separation being facilitated by the non-crystallisable property of the jaborine compounds. The presence of jaborine in commercial pilocarpine was indicated by the action of the latter upon a frog, traces of jaborine causing spasms of the heart. Pure pilocarpine the authors found to contain no jaborine. After having, by means of its physiological effects, determined the presence of jaborine in commercial pilocarpine, the authors set to work to prepare it in at least sufficient quantity as to enable them to experiment upon it. The raw material selected for this purpose consisted in part of jaborandi leaves and partly of the so-called false jaborandi, *piper reticulatum*, and other kinds of pepper. Not having been able to obtain jaborine in a state of perfect purity, the authors have not been at present able to represent it by a formula. Jaborine is a very strong base, differing from pilocarpine by being difficultly soluble in water and easily soluble in ether. Its salts dissolve readily in water and alcohol, and are not crystallisable.—*Chemist and Druggist*, Sept.

THE BOSTON
SOCIETY FOR
MEDICAL
PRESERVATION,

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Lessons in Gynecology. By WILLIAM GOODELL, A.M., M.D.; Professor of Gynecology in the University of Pennsylvania. London : Baillière, Tindall, & Cox. Philadelphia : D. G. Brinton. 1880. 8vo. Pp. 454.

THE first edition of this work has been exhausted, and we are presented with an enlarged and carefully-revised edition within twelve months from the appearance of the first. These lessons have all the greater value that they are the unfettered and genuine clinical expression of a vast practical experience, and bear the impress of that experience in every line. Familiar as we were with the first edition, we can appreciate all the more the additional information to be culled from the present volume, and can congratulate the author on having given to the profession a standard work on gynecology, replete with valuable suggestions and much original matter, written, too, in a pleasant style, just as we would desire to receive it in the theatre, over the operating table, or at the bedside of the patient. We will notice in this brief sketch a few of the many valuable hints which Dr. Goodell gives his class in the treatment of their cases. The first lesson is devoted to the use of gynecological instruments and a description of a gynecological table. In the choice of specula he advises a base-opening bivalve (Goodell's), with blades three inches and three-quarters long, and one inch and a quarter wide; a duck-bill and two-glass (Ferguson's) of different sizes. For our part, for ready use, we prefer the tapering speculum of Hall Davis, nickel plated, or two sizes of these, in one of which, according to Dr. Clement Godson's plan, we can carry a uterine sound, speculum forceps, repositor, lance-pointed scarificator, and tent introducer or uterine dilator. These instruments are made to fit in the speculum, as they can all be unscrewed in the centre, and thus shortened. The specula are enclosed in a leather covering, and readily fit into the pocket, thereby obviating the necessity of taking a gynecological bag about with one to every

case. Nor is there any better speculum than that of Barnes' bivalve, with speculum plug. It is easy of introduction, thoroughly exposes the uterus, and, if not made too long, gives every facility for manipulation. But he who would know how to manipulate thoroughly the uterus must master the use of Sims' speculum. And it is surprising how frequently men lay this instrument aside and relinquish it for the simple reason that they entirely fail to apply it properly. With it alone, or with the different varieties of it, we can perform satisfactorily the various operations on the womb which require precision of movement and complete command over the organ. Few cases do we meet with in which—when we carefully attend to the Sims' position and the other explicit directions which he has laid down—we cannot, with the assistance of his hook, obtain complete command over the uterus with the duck-bill speculum. Dr. Goodell figures a capital table for examination—it combines the purpose of operating couch and cabinet for instruments, applicating fluids, &c., while it is ingeniously constructed to place the woman in the best conceivable posture for examination, her hips being higher than her shoulders, and also giving to her body a lateral dip of four inches if required. Failing such a special contrivance, the requisites the surgeon must secure in examination or operation are sufficient height and breadth of table (not inconveniently long and covered with a smooth blanket) and a good light.

The sound introduced by Dr. Matthews Duncan we prefer to the one commonly called after Simpson. The curve is different, and the *concave* side of the sound is marked by a series of the depressions in inches, not the convex, as in Simpson's. The size of the uterus can be thus read off without any trouble in withdrawing the sound. Nor in introducing the sound for purposes of diagnosis should the fact pointed out by Dr. Matthews Duncan be overlooked—that the sound may pass into a patent Fallopian orifice, and thence into the peritoneal cavity, thus giving rise to an error in diagnosis. In the examination of a case of suspected ovarian tumour, where this occurred to us more than once, and in which the uterus being of normal size, so far as recto-vaginal examination and vaginal examination would enable us to say, the fact of the sound so passing readily without pain almost as far as it would go, caused grave doubts as to the nature of the tumour—tapping showed it to be ovarian—the sound had doubtless passed through the Fallopian tube. Erich's speculum, figured by Dr.

Goodell, enables us to dispense with the aid of an assistant—the duck-bill retractor being held in position by means of a fulcrum plate which is placed over the centre of the sacrum, the instrument being retained in position by a strap which passes as a loop round the patient's body. Dr. Pallen, of New York, has devised a speculum on somewhat a similar principle, which he uses in all operations on the cervix uteri. In referring to that most painful and troublesome of urethral affections, caruncle, the author recommends excision, followed by the use of the cautery (Paquelin's) or the application of carbolic acid.

In granular states of the urethra and its orifice, touching the dilated canal with carbolic acid, or chromic acid, or chloro-acetic acid, at the site of the granulations, followed by the application of oil or vaseline, and the insertion of a medicated bougie of iodoform, will be found the most efficacious plan of treatment. The golden rule in all cases of urethral trouble, both in diagnosis and treatment, is—"secure free dilatation of the urethra," not by too rude force with the finger, but by the uterine dilators, such as those of Duncan and Lawson Tait, cautiously at first, and increasing in size until the finger can be inserted for exploration. Be the cause what it may, the treatment which assists most in the cure of urethral irritation is urethral stretching.

Dr. Goodell's name is so well known in connexion with the modern method, "relaxing the perinæum" during labour, that it may appear superfluous to refer to it here. Yet it cannot be too strongly impressed on the practitioner—the mischief done by the so-called "support" of the perinæum as recommended by the older authorities. "For many years," says Dr. Goodell, "I have not touched a perinæum for the purpose of saving it. Sometimes I do nothing; at other times I make simply a retarding and guiding pressure with my finger and thumb spread over the head of the child as it crowns; when the perinæum is very rigid I relax it by hooking up and pulling forward the sphincter ani with two fingers passed into the rectum, while with the thumb of the same hand I make the needful restraining pressure upon the head." Dr. Goodell advances several strong reasons for thus relaxing the perinæum at the same time that he makes what direct restraining pressure he pleases on the advancing head. Briefly, these are:—Nature is imitated—the perinæum is strengthened at the point of greatest tension—extension is favoured—reflex uterine action is not excited—the blood-vessels and nerves of the perinæum are not interfered

with. We are inclined to think that Dr. Goodell, even on his own reasoning, attributes to the forceps what rather should be laid at the door of the unskilful or rash operator. Baudelocque's dictum, that take it for all, "the forceps has been more injurious than useful to society," is true only when that instrument is placed in the hands of an accoucheur who either employs it at a stage or under circumstances when its use is not justified, or who applies the power it furnishes him with, and brings to his aid a degree and direction of force, under circumstances that render it unjustifiable. Most indispensable is Dr. Goodell's advice—"immediately sew up the wound." Were it oftener acted on we should have less of the troublesome secondary failures, and the practitioner would save himself a host of subsequent annoyance, and his patient much misery and suffering; the only addition we would make to the author's advice would be—use quill suture. Metritis and endometritis, acute and chronic, receive a large share of attention; and in the chapter on local treatment there are several new formulæ. Here we may remark that the soundness of the treatment advocated by Dr. Goodell is manifest as contrasted with the palliative and half-expectant plan pursued by many in the treatment of endocervicitis. The cases appear unequivocal in which cauterisation of the whole mucous tract is indicated. Yet how often we find cases in which every form of topical agent is applied to the cervix as far as the os internum, without any permanent effect, wearying out the patient, and disgusting her with treatment, when efficient dilatation of the canal and the application of nitric acid, in the first instance, would effect a cure. "In my private practice," says the author, "I have yet to see from the cauterisation of the whole mucous lining of the canal worse results than an occasional attack of uterine colic, but rarely so urgent as to require morphia hypodermically." There can be little doubt that local depletion of the cervix is "often the pith of the treatment" in chronic inflammatory conditions of the womb, and that "its neglect is a common cause of failure." Free scarification is, we believe, the best method; it is more convenient, cleanly, and efficacious than leeches; this, followed by the use of the glycerine plug—the latter made with salicylic acid wool—will speedily produce the most marked change in a congested cervix.

There are some admirable formulæ for the administration of various constitutional remedies in chronic endometritis. Dr. Goodell is a firm believer in iron—iron with arsenic, and iron with

cod liver oil. Lesson V. is devoted to the treatment and operative procedures for the cure of the various fistulæ which occur between the bladder, uterus, rectum, and vagina. The remark of Dr. Goodell, that "while lacerations of the perinæum are too often due to the use of the forceps, its disuse or its tardy use leads to the formation of these fistulæ," may be accepted as very near the truth. At the same time we feel that a severe laceration of the perinæum may occur occasionally with or without forceps in the hands of the most careful of accoucheurs. In enumerating the various methods of operating for rectovaginal fistula, the author highly recommends that in which a frill of vaginal mucous membrane is dissected up and pushed through the opening into the rectum, which is then closed by rectal and vaginal sutures. As regards the disputed point of the bowels being locked up after these operations, Dr. Goodell says that his plan is to keep them bound for two weeks, "but there are not wanting surgeons who advise a daily evacuation of the bowels, and I am by no means sure that they are not right." The author advocates closure of the vulva for incurable vesico-vaginal fistula, and he details the steps of his special operation for this purpose. For the treatment of that most wearying of local irritations, pruritus vulvæ, the author gives a number of very admirable prescriptions, the bases of the most important of these being nitrate of alum, iodoform, chloral and camphor, carbolic acid in combination with morphia and hydrocyanic acid, cyanide of potassium, bisulphate of soda; he speaks highly of the use of a sponge wrung out of boiling water, with which the genitals are struck. The tobacco lotion we have found of the greatest benefit, also decoction of walnut leaves. Boracic acid ointment, made with vaseline, and combined with belladonna or cyanide of potassium, is a most soothing and curative application. But too often the constitutional origin of vaginitis is overlooked, and at times the course of the vaginal irritation in the shape of some uterine discharge or unhealthy urine is forgotten, while the ingenuity of the practitioner is exhausted in devising remedies to cure a disease which is maintained by a diabetic or a gouty state, or aggravated by an endocervical discharge.

There is not much that is new in the lessons on uterine displacements and the use of the different varieties of pessary. A war of pessaries has been waged, and, we are afraid, will likely be waged for some time to come. The author speaks strongly in favour of the Smith-Hodge pessary, which is simply the Hodge modified by having

the anterior end bent downwards at right angles and narrowed. In those cases of relaxation of the vaginal wall or where the pelvic structures in the floor are weak, Fowler's pessary, which receives the cervix into a basin, and, at the same time, by its long anterior arm secures the support of the pubic arch, is an admirable one. It is absurd to dogmatise on the value of this or that form of pessary; each case demands that rectification and support peculiar to itself, and which the individual conditions of uterus, vaginal wall, pelvic floor, and tenderness of parts, may indicate. For our part we have yet to find the pessary which answers most purposes required of the uterine support better than the soft Hodge, which should, we think, generally precede the use of the hard vulcanite or metal one. Greenhalgh's various modifications of Hodge have been valuable improvements in this pessary. In anteversion we rely principally on Hewitt's, or some form of extemporised cradle. For prolapse, no pessary has given us such satisfaction as a Zwanke. The old vulcanite kind was troublesome, as the screw is apt to break. It was difficult to get the patient to manage Godson's ingenious modification. This drawback has been obviated by a shield, which embraces the diverging handles of the pessary, and which the patient can loosen or fix quite easily. Of extra-vaginal pessaries, those retained by perineal strap, we have little experience. Those of Cutter and Thomas are too well known to require description. But with regard to these we may safely coincide in the remarks of the author—that, "as a rule, they should not be resorted to until intra-vaginal pessaries have failed." Of the intra-uterine pessaries we must repeat that the choice of the kind depends on the nature of the case whether we use the glass stem of Sims, the various soft winged India-rubber kinds of Greenhalgh, or the perforated vulcanite, the rigid or flexible galvanic, the self-expanding of Greenhalgh, Coghill, and others, with the vaginal support or ring—all will depend on the object with which we introduce it. We can recall a case some time since where, for ten years, there had been vesical irritation, causing great misery and distress to the patient, and in which the urethra had been dilated, and some urethral growth removed, but without avail; pessaries had been recommended by some, denounced by others. The case was one of extreme anteflexion—the lady, a widow, recovered completely by proper replacement of the uterus, and the position then maintained by means of a rigid stem and a suitably fitted cradle pessary—the urethra was dilated and occasionally distended. The local treatment, combined with judicious

constitutional means, resulted in a permanent cure. In the employment of pessaries of all kinds it is unfortunately often forgotten that they exert a physiological as well as a merely mechanical influence. The practitioner is too ready to become wedded to this or that form of pessary, and to try to adjust it to most of the cases he meets indiscriminately, merely choosing the size which he deems most suitable, whereas the adjustment of a pessary requires careful comparison of the uterine neck with the vaginal roof and walls, and relative size and shape of pessary in proportion.

Thorough replacement of the uterus with sound, finger, or, better still, Bantock's repositor, due regard to inflammatory conditions of the uterine mucous tract, or undue sensitiveness of the genital canal, are essential in the fitting of a pessary, but then we must also exercise proper supervision of the woman, especially during the first few weeks the instrument is worn, both as regards comfort and cleanliness.

The operation for laceration of the cervix uteri is one for any knowledge of which we are almost entirely indebted to the American gynecologists.

At the recent meeting of the British Medical Association at Cambridge, Dr. Montrose Pallen made an important communication on this subject, urging the great importance of the step, and giving details of the operation. According to the Americans these lacerations are a potent cause of that form of haemorrhage to which Dr. M'Clintock has directed special attention as occurring at any time after labour, more likely within the first twelve days. But it is to the secondary consequences which attend on uncured lacerations that the American authorities—Marion Sims, Mundé, Montrose Pallen, and more especially Dr. Emmet—have drawn attention. The last-named surgeon it is whose operation, with slight modifications, is the one that is practised for the cure of lacerated cervix. It would appear from the statistics published by Dr. Pallen and the experiences of Drs. Emmet, Marion Sims, and others, that the percentage of cases in which this accident occurs is a much larger one than we would be disposed to think—of those affected with uterine troubles—from 8 to 40 per cent. Dr. Goodell says that he performed the operation for its cure fifty-four times in two years. In short, the reason that the lesion has not been more frequently seen and better understood in the past has resulted from the surgeon overlooking the presence of this fertile cause of uterine disorders—subinvolution, prolapse, erosions, displacements,

hypertrophic elongations, sterility—in his anxiety to heal these affections.

The collar of erosion around this supposed os uteri, which he has been trying for months to heal, is nothing more or less than the naked and chafed mucous lining of the split-open cervical canal. There must be considerable truth in the allegation that we have many times overlooked, and therefore mistaken, lacerations of the cervix, but we cannot admit that they occur in our practice to anything like the extent described by Dr. Pallen. Yet that it is a condition requiring great care in its diagnosis and a fruitful source of failure in the treatment of other morbid states, we must readily admit.

But many times we must have seen rents of varying extent complicating obstinate leucorrhœa, ovaritis, chronic enlargement of the cervix and body, and perhaps menorrhagia. The origin of these evils in a split cervix has not occurred to us. We must, however, acknowledge that no recent advance in gynaecological science exceeds in importance the knowledge which we owe to Dr. Emmet of the correct diagnosis and treatment of lacerated cervix. In the early stage Dr. Goodell recommends rest, disinfecting lotions, the arrest of the haemorrhage by hot water injections, &c. If operation is at first shunned, the glazing over of the naked villi is best effected by injections of very hot water, the glycerine tampon, iron sub-sulphate, suppository of iodine and iodoform applications. If there is fungoid proliferation the use of the curette is indicated. Before operation all traces of inflammatory deposits should have disappeared. The steps of the operation consist of—1st. Placing the woman in the proper lithotomy position, mapping out the amount of tissue needing denudation, and steadying the cervix with a tenaculum; 2ndly. Having secured the cervix within manipulative reach the lateral edges of the future os uteri are pared, and the cicatricial tissue of the fissure is dissected away until its edges are carefully pared and freshened right up to its angle; 3rdly. Short lance-headed needles held in a long needle-holder are used for inserting the sutures (silver wire), which are drawn through by means of a silk loop previously passed, and finally clamped with split shot. But for the minute details of the operation and the subsequent treatment, we must refer our readers to Dr. Goodell's description and Dr. Pallen's paper before referred to.

The chapter on malignant disease of the uterus embraces the details of the operations of Freund and Kochs for extirpation of the

womb. Referring to Freund's operation, Dr. Goodell says:—"It has now been performed some twenty-eight times with but nine immediate recoveries—the operation being too young to determine remote results. This looks like a small percentage of success, but in so cruel and hopeless a disease it is large enough to justify further trial of the operation."

Dr. Clay's treatment of cancer of the uterus by the internal administration of Chian turpentine had not been published when Dr. Goodell gave this lesson. In some well-marked cases of cancer of the cervix in which we tried the Chian turpentine it certainly arrested the haemorrhage, and, with local means, appeared to lessen the pain, but had little effect on the progress of this disease.

For vegetation of the endometrium, produced by any cause tending to maintain a chronically congested state of the uterine mucous coat, the blunt or sharp curette must be used. Dr. Goodell recommends the subsequent application of iodine to the uterine cavity. As illustrative of the value of the curette we may instance two cases of uterine haemorrhage, recently under our notice, in which the haemorrhage was caused by the remains of adherent placental fragments that remained after abortion. Dilatation with tent and the removal of the adherent portion from the uterine wall, by means of a sharp curette and small forceps, arrested the haemorrhage, and both patients have since become pregnant. The greater portion of the remainder of the lessons is devoted to the consideration of ovarian tumours and uterine fibroids. Hildebrandt's treatment of the latter by subcutaneous injection of ergotine still continues to be lauded by some physicians, while it has altogether failed in the hands of others. It has not, though used in full quantities by us, apparently arrested the growth of the tumour, but it has certainly restrained the haemorrhages. Bonjean's ergotine, with Dr. Athill, we still believe to be the best—jected deeply into the muscular tissue; we have selected the gluteal region. In one case in which this treatment was pursued two or three times weekly for months, there was no abscess or other unpleasant effect, though up to ten grains of the ergotine were finally injected on each occasion for the last month.

In the discussion opened this year in the Obstetrical Section of the British Medical Association at Cambridge by Mr. Spencer Wells, "On the Removal of Uterine Tumours by Abdominal Section," whether these be of a myomatous or fibromatous nature (as outgrowths from the uterus towards the peritoneal cavity,

subperitoneal growths with or without pedicle), he gave the results of his operations up to that date. In all he had sixty cases, thirty-four of removal, with eighteen deaths and sixteen recoveries; twenty-six of incomplete operation, with only one death. He had sixteen deaths out of forty-five operations before adopting Lister's antiseptic method; three deaths in fifteen operations after the adoption of antiseptic precautions. He again urges the absolute necessity for securing complete closure of the peritoneal cavity after removal of cyst or tumour; and as in ovariotomy it is essential to bring the peritoneal edges and the surface of the opening carefully together, so in removal of a uterine fibroid is it indispensable to bring the uterine peritoneal edges together. He leans to the side of the uninterrupted suture. The object is the same in both cases—to prevent the escape of fluids of any kind into the peritoneal cavity from the surrounding tissues and to protect the viscera completely. We recently saw a case in which Mr. Wells had removed a large uterine fibroid. Within eight days from the day of operation the abdominal sutures were removed, and there had been an uninterrupted recovery without any febrile disturbance. Antiseptic surgery has thus diminished the risks and enabled the operator to rely on the intra-peritoneal method of treating the stump. It may be reserved for Mr. Wells to do for this operation that which he has done for ovariotomy—to prove that abdominal section for fibroid tumours is a justifiable surgical procedure, to diminish to a minimum the risks of the operation, and to add to his already unrivalled renown by proving that abdominal section for uterine fibroid is not, as Dr. Goodell now characterises it, "among the most desperate remedies known to science." In prolapse of the ovaries Dr. Goodell advises the knee and breast posture, by means of which the patient's trunk is supported on a tripod consisting of the patient's knees (ten inches apart) and the upper portion of her thorax; she breathes naturally, supports her head with one hand, the elbow resting on the table or hard bed, and with the disengaged hand she opens the vulva, or previously inserts a glass tube into the vagina, thus permitting air to enter the vaginal cavity. She remains in this posture for a few minutes. The ovaries thus, obedient to gravity and following the displaced viscera, get, as Dr. Goodell expresses it, "the good habit of staying at home." In a lengthy chapter he enters fully into the indications for the operation of oophorectomy, associated so generally with the name of Dr. Battey. Dr. Goodell quotes the cases of

Pozzi, Koeberlé, Kimball, also West, Keith, and Thomas, to show the great mortality after the operations of enucleation and hysterotomy; and he argues in favour of spaying for the object of reducing the size of the tumour, and curing the other consequent symptoms by establishing the menopause. The operation has been more frequently performed to relieve those symptoms which Dr. Goodell so well groups, thus—"the atrocious suffering, the exhausting menorrhagia, the intensely severe dysmenorrhœa, the inter-menstrual ovaralgia." These symptoms, associated as they very often are with a variety of causes, make life indeed a misery, and removal of the ovaries is the only cure. Of one hundred and forty-three cases of removal of both ovaries tabulated by Dr. Goodell, there was some irregular menstruation in twenty-six, and in a short time, in most of these latter, menstruation ceased in a short time; nor, as he points out, is this more than a blood leakage, it is not strictly a menstrual molimen attended by the physiological phenomena of menstrual ovulation.

Recent statistics would appear to prove that this operation must soon take its place with other modern surgical procedures, which, though apparently formidable and dangerous in themselves, nevertheless in the hands of cool and skilful surgeons, and surrounded by all the precautions of antiseptic surgery, are not attended with more risk in their performance and results than the terrible affections for which they are devised justify. At the same time it is well to remember that such a step as spaying, with all its consequences and risks, is a *dernier ressort*, and that grave indeed is the responsibility attaching to its adoption. Nor is it well to overlook such a case as that told in a recent number of *The Lancet*, in which an eminent surgeon performed oophorectomy on a woman for all the aggravated symptoms attendant on dysmenorrhœa. The cure was complete; there were no bad results—a most successful case; but then the operation was peculiar in this respect, that the incision did not pass beyond the integuments, and the patient was unconscious of the important fact that the operation was a sham. Yet the hysterical condition was completely cured.

The remainder of Dr. Goodell's work is devoted to the consideration of ovarian tumours and ovariectomy, into the minutest details of which operation he enters and gives a clear and accurate description, not alone of the operation itself, but also of all the previous precautions and necessary preparations, as well as the after-treatment. The history of ovariectomy, from the time of Ephraim M'Dowell on to

the present day, has indeed been, as Dr. Goodell says, a romance. Clay, Baker Brown, Keith, in England; Atlee, Kimball, Dunlap, Peaslee, Marion Sims, in America; Langenbeck, Martin, Nussbaum, Speigelberg, Schroeder, on the Continent, have been in the van, and have worthy followers in such men as Knowsley Thornton, Bantock, and Tait, in England—in whose hands the operation is brought to that degree of perfection hardly to be surpassed. But in Great Britain one man stands pre-eminently out as the individual who, by his fertility of invention, his power of diagnosis, his boldness in operation, his coolness and precision, his great dexterity and manipulative skill, his candour of results, his careful records of cases and particulars of operation, his accidents, his failures, his causes of success, has earned for the name—Spencer Wells—that reputation as an operator which gives him the proud position of *facile princeps* among living ovariotomists. Careful occlusion of the peritoneal cavity by proper adjustment of the peritoneal edges, complete arrest of all haemorrhage no matter how trivial, the intra-peritoneal method by ligation of treating the pedicle, the scrupulous care with which the minutest details of the antiseptic process of Lister are carried out—these strike an on-looker as the main elements of success in Mr. Wells' operations.* Dr. Goodell devotes several lessons to the prophylaxis of uterine disorders full of practical and useful hints.

We cordially welcome this volume as a most valuable addition to gynecological literature, replete with sound information, given in that simple clinical style which makes it all the more acceptable to the student or busy practitioner.

MACNAUGHTON JONES.

A Text-book of the Physiological Chemistry of the Animal Body, including an Account of the Chemical Changes occurring in Disease. By ARTHUR GAMGEE, M.D., F.R.S., &c. Vol. I. 8vo. London: Macmillan & Co. 1880. Pp. 487.

THERE has been a dearth of good books on Physiological Chemistry, written in English, for the last ten years.^b The last few attempts made to meet the want of such a book have been more or less

* Since the above was written Mr. Wells has completed fifteen of his second thousand ovariotomies (of which one was a double cox), with only one death.

^b The excellent Handbook for the Physiological Laboratory of Prof. Burdon Sanderson is an exception to the above statement, but it does not profess to be a manual of physiological chemistry.

failures. Some have contained too little; others have been written by chemists who were insufficiently acquainted with medicine, and who, consequently, failed to meet the requirements of medical men; while others have been written by physicians who had not a sufficient acquaintance with chemistry. Indeed we had begun to think the race of British physiological chemists was well-nigh extinct. There was, however, probably another reason which prevented the publication of such books—namely, the fear of being drawn into endless controversy; for in a comparatively new science, where well-ascertained facts are few and crude theories abundant, there must necessarily be differences of opinion, and such differences have led to very warm controversies, which, from the dearth of facts, have generally ended in a drawn battle.

In our opinion the future advancement of medicine must very largely depend upon the progress of physiological and pathological chemistry, and the workers in that field should not only be conversant with chemistry, but also possess an extensive knowledge of physiology and medicine.

In the present case we have a book written by a well-known physiologist, whose contributions from time to time to the "Proceedings of the Royal Society," and to various journals, show an extensive and accurate acquaintance with physiological chemistry, and who possesses one of the greatest desiderata of an author of such a book—namely, a knowledge of what has been done and what is being done by Continental chemists.

The proteids are fully treated of in the first chapter, which discusses their amount in various liquids, tissues, and organs, their non-diffusibility, their behaviour with polarised light, with an account of different kinds of polarimeters, of which the author selects Laurent's. He gives a full account of the construction of, and the methods of working, this instrument. The chemical reactions of the proteids are next described, and the methods required to separate them, and to distinguish them from each other, also their decomposition by such agents as heat, water, putrefaction, strong mineral acids, caustic alkalies, &c.

Chapter II. deals with the blood. Here an apparatus for collecting pure arterial or venous blood, or both, so as to avoid contact with air, is figured and described. Three methods for determining the reaction of blood are given, which eliminate the difficulties attending the presence of haemoglobin. The methods of Liebreich and Zuntz are preferred by the author.

Methods for obtaining plasma, fibrin, serum-globulin, and fibrinogen, are described at length, and the various theories of coagulation discussed. The author concludes (p. 53) "that the evidence is decidedly in favour of the view that the coagulation of the blood is dependent upon the presence in the plasma of a proteid body, *fibrinogen*, which, under favourable circumstances, undergoes conversion, or perhaps decomposition, into *fibrin*. The conversion of fibrinogen into fibrin outside of the body appears to be connected with the action of a ferment produced in the colourless cells of the blood, and probably only set free when these cells break down."

The non-coagulation of blood in living blood-vessels he says "is probably connected with a persistence in an intact condition of the colourless cells—or, rather, of those cells in which the fibrin-ferment originates—and not, as might be supposed, upon the destruction of the fibrin-ferment by the vascular walls at the moment of its liberation."

For the preparation of pure serum the use of the "centrifugal machine" is recommended, which enables it to be obtained almost free from suspended blood-corpuscles, and before putrefaction has taken place.

Methods for separating serum-globulin from serum-albumin, and the chemical characters of these bodies, are described, as well as the salts and extractives of serum.

The various methods of estimating the number of blood-cells in a given quantity of blood are next described; for example, by the method of Vierordt and Welcker, of Malassez, and of Gowers, which last is a modification of that of Hayem and Nachet. The method of Gowers is undoubtedly the best for clinical work—in fact, his haemacytometer is now used by many scientific physicians. By means of such instruments it has been estimated that a cubic millimetre of blood of a healthy man contains 5,000,000 blood-corpuscles (Welcker). Malassez has determined the total number of blood-corpuscles in the blood of man to be 22,500 milliards. "Admitting the superficies of each blood-corpuscle to be $\frac{128}{1000}$ ths of a millimetre square, then the total superficies of the blood-corpuscles of men would amount to about 2,880 square metres—i.e., to the area of a square, each of whose sides is about 53·66 metres long."

For the method of estimating the density and weight of the coloured corpuscles we must refer the reader to the original, as well as for the discussion of the chemical composition of the stroma of the blood-corpuscle, the presence or absence of nuclein in the

nucleated red blood-cells of birds, snakes, &c., and the presence or absence of lecithin and protagon.

Cholesterin, the author holds, "is an invariable constituent of the red blood-corpuscles, and can be separated from them by ether." If this be so, then everybody must be the victim of "cholestearæmia," and Dr. Austin Flint's hypothesis is, as is now well known, untenable.

Eight methods are described for the preparation of pure hæmoglobin, with a fulness and attention to detail which place students of physiological chemistry under great obligations to Prof. Gamgee.

For the examination of the absorption spectrum of oxy-hæmoglobin, Hoppe-Seyler's *hæmatinometer* is recommended, or the *hematoscope* of Hermann. The latter allows different depths of fluid to be examined with great ease, and by reference to the attached scale the depth of the stratum in millimetres may be ascertained. For measuring spectra and mapping them from the chemical spectroscope, the author uses the scale-tube; and he also recommends the camera-lucida method of mapping, described by MacMunn in this Journal (June, 1877). He prefers, for micro-spectroscopic observation, the instrument of Carl Zeiss, of Jena, which has a scale attached which allows the wave-lengths of absorption bands to be easily calculated. But an observer who possesses already a microspectroscope need not go to the expense of buying a new one, for he can easily reduce his readings to wave-lengths by means of graphical interpolation. In addition to Stokes' fluid for the production of reduced hæmoglobin, the author recommends a solution of stannous chloride (SnCl_2), which presents an advantage over the iron solution in this, that it does not become deeply coloured as it absorbs oxygen, and therefore does not affect the light like the former. The action of various gases on hæmoglobin, and the decomposition products of that body formed under the action of various reagents, are treated of at considerable length, and two accurately-drawn charts of spectra, which have a scale of wave-lengths attached, accompany this part of the book.

Methæmoglobin, about which a great deal of useless discussion has taken place, is also described, and the author calculates the wave-length of the centre of the band in red to be 632. In our opinion this body is nothing more than an intermediate stage of oxidation of hæmoglobin, stronger oxidation producing hæmatin.*

* This is similar to the view which Hoppe-Seyler takes. See p. 111 of Professor Gamgee's book.

Hæmochromogen, or reduced hæmatin, and Hoppe-Seyler's methods of preparing it, are also given at length. We have found that this body can be produced, mixed with alkaline hæmatin, by simply acting on *reduced* hæmoglobin with caustic soda dissolved in alcohol. By acting on oxy-hæmoglobin with the same reagent we get alkaline hæmatin.

We are glad to see that the author leans to the opinion that bilirubin and hæmatoidin are identical. The body which Preyer called hæmotoidin was undoubtedly not that body but lutein, as an inspection of its spectrum, as figured in "Die Blutkrystalle," will show. This chapter concludes with an account of the distribution of hæmoglobin and other blood-colouring matters in the animal kingdom.

The changes which the blood undergoes in disease are considered in the third chapter. The various constituents of blood—such as water, the red cells and hæmoglobin, fibrin, serum-albumin, fats, cholesterin, urea and uric acid, salts and gases, &c.—are first treated of as they may vary in disease generally, and afterwards their variation in special diseases is considered. Accompanying the description of hæmoglobin as it is affected in diseases generally, is a table copied from Quincke, which will be found very useful. It shows the amount of hæmoglobin, in grammes, in every 100 grammes of blood found in various diseases. The changes of the blood in anæmia, both as regards the number and appearances of the red cells and the amount of hæmoglobin, as they have been studied by Hayem and Malassez, are here described. Professor Gamgee considers that the attempt made to distinguish between the changes in the blood in chlorosis and other forms of anæmia is artificial and useless.

The crystals sometimes seen in the blood and spleen of cases of leucocythæmia, and known as "Charcot's crystals," are shown to be the phosphate of the same base which Schreiner discovered in semen, and in the spirit in which anatomical preparations have been kept, and to the hydrochlorate of which the latter author ascribes the formula, $C_2H_5N \cdot HCl$. [Förster saw the same crystals in the bronchial discharge of a man suffering from bronchitis. White, an American, termed them leucosin. Other observers considered that they consisted of tyrosin, others mucin, others vitellin, others magnesic phosphate; but Schreiner showed that they are undoubtedly phosphate of spermatin.—*Rev.*]

Progressive pernicious anæmia, scurvy, gout, febricula, typhus

and typhoid fever, relapsing fever with its "spirillum," splenic fever (of cattle), intermittent fever and its "bacillus malariae" (as discovered by Klebs and Tommasi-Crudeli), scarlet fever, measles, smallpox, erysipelas, cholera, diseases of the heart, of the lungs, and of the liver, are discussed as to the condition of the blood which various observers have found in these diseases; but a perusal of this part of the book shows how little has been done and how much yet remains to be done in this field of inquiry.

The author does not receive the acetonæmic theory of diabetic coma; that acetone is evolved from the blood in such cases he does not deny, and its presence he thinks is due to the splitting up of ethyl-diacetic acid, but he holds that acetone does not exist free in the blood; he thus agrees with Rupstein. With respect to the theory that diabetic coma is due to the lipæmic (fatty condition) of the blood and fat emboli, which was promulgated by Sanders and Hamilton, the author thinks that it is not supported by his own observations.

Speaking of uræmia he also rejects the urea theory, and remarks—"It must not be forgotten that before the condition of uræmia is induced the blood has usually become rich in water, poor in albumin, poor in corpuscles, and that in addition to an accumulation of urea and uric acid it probably contains an excess of other proximate principles which may exert a specially poisonous action." He also rejects the theory of Frerichs, who supposed that the symptoms were due to the conversion of urea into carbonate of ammonia in the blood.

The methods of research described in the fourth chapter include—methods for ascertaining the specific gravity of the blood, its reaction, the amount of water, solids and ash, the amount of fibrin and of hæmoglobin; the latter is best estimated by means of Gowers' hæmoglobinometer, which for clinical work is easily used. Hoppe-Seyler's method by means of the hæmatinometer, and Preyer's by means of the spectroscope, receive a due share of attention at the hands of the author. We may pass over the estimation of cholesterol, lecithin, fats, and that of the proteids in serum and fibrinogen in liquor sanguinis, &c., until we come to the determination of the presence and quantity of urea in blood. This is important to the physician, and we are glad to see that the author describes two methods which enable the urea to be determined with great ease. Of these we select Haycraft's:—"Defibrinated blood, varying in quantity between 10 and 20 c.c., is placed in a

dialyser, so as to form a layer on the parchment-paper not deeper than 4 mm. The dialyser is placed in a vessel containing a volume of absolute alcohol equal to twice that of the blood." After from one to four hours the fluid part of the blood containing the urea has passed into the alcohol, and a solid mass is left behind, which is then mixed with a little water and again placed in the dialyser. This process is repeated three or four times until all the urea has been extracted. The alcohol is then poured into a shallow porcelain dish, and after acidifying with oxalic acid, which converts the urea into an oxalate, the fluid is evaporated to dryness. From the residue fat and colouring matter are removed by *petroleum naphtha*, leaving the oxalate of urea undissolved. The latter is mixed with a little barium carbonate, after having been dissolved in water, and the mixture is evaporated to dryness. On boiling with alcohol this fluid extracts the urea, and now on evaporating the alcohol pure urea is left, which may be estimated in the usual manner.

There are also methods given in this chapter for the estimation of uric acid, sugar, moist corpuscles, and also for the determination of the gases of the blood—the various "pumps" required for the purpose being figured and described at great length, such as Ludwig's, Pflüger's, and Alvergniat's. The method of determining the total quantity of blood in an animal's body, and a short paragraph on the detection of blood-stains and of carbonic oxide poisoning, bring this interesting chapter to a conclusion.

Chapter V. opens with an account of lymph and chyle; and the composition of these fluids, including their proteids, fats, extractive matters, salts and gases, is discussed. Synovia and cerebro-spinal liquid follow; and the latter, the author says, is alkaline, sp. g. 1005; it does not coagulate distinctly when heated, though it contains appreciable quantities of globulins. "It contains a body which, like glucose, reduces cupric oxide," as Prof. Turner first pointed out. It is to the last remark* that attention should be given, as it affords a very valuable means of diagnosing this fluid from others resembling it.

The account of the liquids in drop-sies, and of the method of analysing these and other serous fluids, will also be very useful for purposes of diagnosis.

Pus is discussed in Chapter VI., and we notice the author is

* We do not mean to convey the idea that this statement is new, as we were taught this fact many years ago by the lamented Prof. R. W. Smith, but it is not widely known.

rather sceptical about Miescher's nuclein, and we believe that physiological chemists will agree with him on that point.

Chapter VII. is occupied with the connective tissues, and with collagen and gelatin, elastin, mucin, and fats. Cartilage and bone, the latter normal and morbid, with methods for its qualitative and quantitative analysis, and teeth, occupy the rest of this chapter.

Chapter VIII., dealing with the epithelial tissues, keratin, chitin, and various animal colouring matters, will be found useful by students of general biology.

Chapter IX. is devoted to the consideration of the contractile tissues, and it gives a masterly review of the histology and physiology as well as of the chemistry of muscle.

In p. 321 the author observes:—"The facts then that (1) a large portion of the contents of the sarcolemma can be expelled from it in the condition of a liquid, and that (2) living bodies move in the interior of the living fibre, as in a liquid holding solid bodies in suspension, appear to us to settle definitely the great problem of the physical condition of the doubly-refracting and isotropous elements of muscular fibre. We cannot, for instance, for one moment suppose that a liquid can change its form in consequence of internal forces acting within it, unless these lead to its becoming solid. We are, therefore, led on theoretical grounds to the conclusion that the sarcous elements must be the structures which are directly concerned in the change of shape of the fibre."

The chemical characters of the sarcolemma, of the doubly-refracting elements, of muscle plasma, and of the solid body—myosin which separates from muscle plasma when this body coagulates, of muscle serum, and of the haemoglobin of muscle, are here described.

Among the non-proteid organic constituents of muscle are included creatine, with methods for its preparation, creatinine, hypoxanthine, xanthine, carnine, urea, inosinic acid, and taurine. Of the non-nitrogenous organic constituents the author describes the fats, glycogen (which Nasse, Brücke, Abeles, and others have shown to be normally present in the muscles of adult animals), inosit, ferments, &c. The phenomena of living muscle at rest and in action, as regards the rate of contraction, the cause of contraction, tetanus, heat of contraction, electrical tension, &c., are also discussed.

The author then describes the chemical changes which take place in living muscle as to the gaseous constituents, and gives a

diagram and full description of Hermann's apparatus for the extraction of the gases of muscle, and as to the changes which take place in the non-gaseous constituents in activity and rigor. He states that the acidity of muscle in the state of rigor, or which has been tetanised, is chiefly due to the liberation of lactic acid, but that in the earliest stage of rigor it is probably due to an acid potassium phosphate, produced from the alkaline phosphate by the action of lactic acid.

The changes which occur in the chemical composition of the medium surrounding muscle (α) when it is exposed to the air, (β) when it is still in the body, and (γ) as shown by the analysis of the general excreta of the body, are treated of at length. Under the last head the effects of muscular exercise on the excretion of urea, and the experiments of Voit on his well-trained dog, and of Fick and Wislicenus on themselves, of Parkes, of Edward Smith, of Flint and Pavy on Weston, and of W. North, bearing on this subject, are summarised and criticised with great care. The author concludes that "muscular exercise somewhat enlarges the total excretion of nitrogen;" but for the full discussion of this subject and the very interesting remarks on it we must refer the reader to the book itself, as well as for the chemical changes which occur in living muscle at rest and in fatigue, exhaustion and revival, &c.

In Chapter X. the chemistry of the nervous tissues is treated of, and among the phosphorised constituents we find an account of the author's valuable researches on protagon, to which he gives the formula $C_{160}H_{308}N_5PO_{35}$. From a careful consideration of the facts given, we are inclined to agree with Professor Gamgee that this body is a "definite chemical individual," especially since he asserts that "pure protagon is remarkably rebellious to the action of even boiling alcohol, though that action be continued for hours, and the most persistent attempts to separate lecithin from it have failed;" besides, the series of "combustions" made by Prof. Gamgee and Dr. Blankenhorn gave a remarkably uniform result.

In the last chapter the author treats of the chemistry of the tissues and fluids of the ear and eye, and included under the chemistry of the latter organ is an interesting *r  sum * of what is known of rhodopsin or visual purple. In 1876 Boll announced the curious fact that the bacillary layer of the retina is not colourless during life, but purple, and he supposed that this colour is being constantly destroyed by the light entering the eye, and he showed that darkness restores the colour, which disappears soon after

death. Kühne, on repeating Boll's experiments, found that the colour does not disappear after death if light be excluded from the retina, and he succeeded in keeping the colour for from twenty-four to forty-eight hours by exposing the eye only to monochromatic light, such as is given by the sodium flame. It has since been found that this colour is confined to the rods and to their outer segments, and that the more rods there are the greater the amount of visual purple, and conversely the more cones the less the visual purple; so that the fovea centralis contains none, as is also the case with the rodless retinae of reptiles.

A method for the isolation of rhodopsin is given by means of its solution in crystallised bile. For this the reader may consult the original, where its optical characters, the spectrum of visual purple and visual yellow, of the effect of light of different wave-lengths on it, and of the effect of temperature, &c., are discussed.

We cannot close this review without quoting one passage which describes an experiment that is now known to most of our readers, but which is not perhaps known to all:—

"Kühne took a coloured rabbit and fixed its head and one of its eyeballs at a distance of one metre and a half from an opening thirty centimetres square in a window-shutter. The head was covered for five minutes with a black cloth, and then exposed for three minutes to a somewhat cloudy midday sky. The animal was then instantly decapitated; the eyeball which had been exposed was rapidly extirpated by the aid of a yellow light, then opened, and instantly plunged in a 5 per cent. solution of alum. Two minutes after death the second eyeball, without removal from the head, was subjected to exactly the same processes as the first—viz., to a similar exposure to the same object, then extirpated. On the following morning the milk-white and now toughened retinae of both eyes were carefully isolated, separated from the optic nerve, and turned; they then exhibited on a beautiful rose-red ground a nearly square sharp image with sharply-defined edges; the image in the first eye was somewhat roseate in hue, and less sharply defined than that in the second, which was perfectly white. The size of the images was somewhat greater than one square millimetre."

To such images Kühne gave the name *Optograms*.

Since the most sensitive region of the eye contains cones only, and therefore no visual purple, and since animals which are known to have keen vision have no visual purple, Prof. Gamgee concludes that the discovery of visual purple has not solved the problem as to the mode in which light affects the retina.

The illustrations are very well executed, and the titles of all the papers quoted are given in full. This latter point alone distinguishes this book from others of the same class, and makes it especially valuable to the earnest student. We congratulate Prof. Gamgee on having accomplished a task—which was one of great difficulty—in a very thorough manner, and we advise every practitioner who has the advancement of his profession at heart to make himself acquainted with the contents of this volume. We hope the publication of the second volume, which is to deal with the animal functions, will not be long delayed. If it proves to be equal to the first volume, then Prof. Gamgee will have produced the best work on physiological chemistry that has yet appeared in England.

Osteotomy; with an Inquiry into the Aetiology and Pathology of Knock-knee, Bow-leg, and other Osseous Deformities of the Lower Limbs. By WILLIAM MACEWEN, M.D., Surgeon and Lecturer on Clinical Surgery, Glasgow Royal Infirmary. London: J. & A. Churchill. 1880.

DR. MACEWEN's book will be read with interest and advantage by all practical surgeons, but more particularly by those whose practice lies in places where rickets is a rare disease. Few surgeons so situated appreciate the merit of an operation the object of which is to remove the deformities of the lower limbs resulting most commonly from this disease, because they so seldom require to adopt it. Dr. Macewen furnishes facts sufficient to startle many a practical surgeon. The author's operation was first performed on May 19th, 1877. Since that date "557 limbs, belonging to 330 patients affected with various deformities requiring osteotomy," have been submitted to compound fractures of the femur or tibia and fibula, all by the same surgeon. How many patients have died? "Of those who have been operated on three died—one from pneumonia, contracted prior to the operation; one from tubercular meningitis, and one from diphtheria." In cities where rickets is endemic, surgeons already know and are familiar with many of these facts, for the operation and its success are already well known to them; but where the disease is comparatively rare the operation has not as yet made its way. Some years ago any surgeon who proposed such treatment would have been condemned as reckless, and rightly so, for the results of the present day could

not have been then obtained. "The times are changed, and we are changed with them." Let us stay a moment to examine the clinical details of these 557 operations; the author gives them in the following words:—

"With the exception of eight cases, all the wounds healed by organisation of blood-clot without pus-production. In seven of the eight cases which suppurated there was a distinct known cause for the pus-production. Thus, in three instances a bruising and laceration of the soft parts occurred during the operation. In one a layer of muscle became caught between the cut surfaces of the tibia, and was severely rubbed during the adjustment of the bone. The fifth and sixth were due to irritation, set up by pressure of a bandage in one, and the splint in the other. The seventh may likewise be attributed to pressure of the foot and limb, through the patient's own actions. In the eighth case no clear reason could be assigned for the pus-production. The amount of the pus in these cases varied from a few drachms up to a number of ounces, necessitating frequent dressings. With one exception they ultimately did well, their convalescence not being retarded. The exception was a bow-legged patient, who, on the second night, during the nurse's temporary absence, rose from bed and fell, his splint and bandages becoming twisted. He managed to get back into bed, and foolishly concealed the accident, though suffering great pain. Ten hours after, at the morning visit, his foot was found twisted, his toes benumbed, and the splint misplaced. A portion of the foot ultimately became gangrenous, and the limb had to be amputated. It was not until long afterwards that the cause of this accident was confessed."

In the study of these results it must be borne in mind that the method of operating employed has not been, as a rule—or even frequently—subcutaneous, as in certain other very successful osteotomies—i.e., Mr. Adams' and Ogston's on the hip and knee, respectively; but, on the contrary, by open wounds, with, in many cases, the removal of wedges of bone; in many, too, the bones were "divided in three or four places, the divisions being at very short distances from one another—thus causing what resembled a compound, comminuted fracture." To what is to be attributed this remarkable success—these hundreds of compound fractures without a death fairly chargeable to the operation, with only eight cases of suppurating wound? Dr. Macewen answers this question: "They are, therefore, compound osseous incisions or fractures treated antiseptically." Yet, in the face of such facts as these, we every day hear antiseptic surgery sneered at by authorities in high places—aye, and in low too.

Dr. Macewen gives, in clear and graphic language, the description of the detail of his operation—viz., section, with a series of three chisels of dimensions such that they may be used in succession in the division of the shafts of the femur, tibia, or fibula, without risk to the surrounding parts or of splitting the bones beyond the required limits, provided always they are used with the care the author directs. The shape, weight, and temper of the instruments are given with scrupulous accuracy, and yet in these descriptions there is nothing tedious, nor is there, we think, much left unsaid. All these details the reader who wishes to profit by Dr. Macewen's book must study in the original; to quote from the author would, if our review were to give useful information, require that we quoted the practical chapters at length; to abridge the author's description would be impossible. While the parts of Dr. Macewen's book relating directly to osteotomy are excellent, we must take exception both to the reasoning and language of those on the pathology of knock-knee and the allied deformities. The chapters on the pathology of rickets add nothing to our knowledge of the disease, while the argument that because rickets is the commonest cause of these deformities they are therefore all due to rickets is illogical. "The child could not walk up till five years of age," and many similar deformities of language, disfigure the text; words, too, such as "expiscated" and "dubiety," though they may be supported by rare and exceptional authority, are curiosities of language quite out of place in a treatise on surgical pathology.

Practical Lithotomy and Lithotrihy; or, an Inquiry into the best modes of Removing Stone from the Bladder. By SIR HENRY THOMPSON, F.R.C.S.; Surgeon-Extraordinary to His Majesty the King of the Belgians; Emeritus Professor of Clinical Surgery, and Consulting Surgeon to University College Hospital, &c. Third Edition. London: J. & A. Churchill. 1880.

THE two previous editions of Sir Henry Thompson's book are familiar to all who study practical lithotomy and lithotrihy; the third edition will be all the more welcome as it analyses the recent progress of surgery in these operations, and furnishes the statistics of them in a form and mass which cannot be rivalled in the writings of any other author. Sir Henry Thompson possesses the rare merit of a liberal spirit. How seldom do we see a surgeon pre-eminent

in skill and practice, and of mature age, capable of testing and adopting the practice of others in his own speciality; yet the essential interest of the present edition of his book is that it contains his criticisms and experience of Bigelow's method of lithotrity—an operation which revolutionises the long-cherished principles which guided the most skilled lithotritists, the principles which Sir Henry has long worked on and taught.

To Bigelow's ill-sounding term, "litholapaxy," Sir H. Thompson very fairly takes exception, and uses in its place the simple description, "lithotrity at a single sitting." He states his experience and opinion of the method in the following words:—

"This was a bold, and I think it may be considered a happy idea. My mind was already prepared by past experience to receive it favourably, although the means Bigelow employed in the shape of instruments, especially the lithotrites he proposed to use for the purpose, are unnecessarily large and clumsy, and I at once tried the plan, and have, to a very great extent, carried it out during the past twelve months. Having tested it to the extent of 35 cases, I do not hesitate to regard it as, on the whole, in competent hands, successful. Let the stone, as to size, be within the limit of the surgeon's powers, and let all be removed, or, at all events, the greater part of it, at the first trial. In attempting this, he should commence by crushing freely with a light but strong lithotrite, removing *débris* by the aspirator current afterwards. This done, the lithotrite is again introduced, if necessary, to deal with the remainder, and is again followed by the aspirator. If the rattle of fragments in the bladder against the end of the evacuating catheter still exists after its use, the lithotrite is to be again introduced to break them down, and another employment of the aspirator will, perhaps, complete the task. If only a few pieces still remain, it is better, perhaps, to leave them than to subject the parts to repeated manipulations in order to remove some tiny portion. Such will do no harm, and may be removed at a second sitting. By this method, instead of limiting the sitting to a term of two or three minutes, it may extend from five or seven to twenty-five or thirty minutes, although a watchful caution must control the period as it becomes extended to the longer term named."

The gravest objection to Bigelow's method is, according to Thompson, the size of his lithotrites and evacuating catheters, which are "too large to be safely passed into the bladder by ordinary hands." To see the array of these instruments, as exhibited by the instrument-makers, is quite sufficient to satisfy the surgeon with "ordinary hands" of the truth of this objection. Such a one will perhaps find relief in the following pertinent observation of

Thompson:—"Large instruments are wholly unnecessary for at least three-fourths of the stones which occur in practice." Of equal interest and importance in this third edition is the statistical account of Thompson's cases of stone in the adult male bladder, operated on by the author up to January, 1877—in all, 500. The facts of the table has already been published in the Medico-Chirurgical Transactions, 1878, but their reproduction in the present volume adds to the completeness of the work, and render them more accessible to the ordinary reader. In addition to his own cases, the author has collected a reliable series of cases of lateral lithotomy at all ages from nine English sources, numbering in all 1,827, the death-rate of which is 1 in 7·977; examined in groups, these cases gives the following results:—

During the years	Cases.	Deaths.	
1 to 5 inclusive	- 473	33	1 in 14½
6 „ 11 „	- 377	16	1 „ 23½
12 „ 16 „	- 178	19	1 „ 9½
17 „ 29 „	- 162	22	1 „ 7½
30 „ 38 „	- 75	7	1 „ 10½
39 „ 48 „	- 100	17	1 „ 6
49 „ 58 „	- 191	40	1 „ 4½
59 „ 70 „	- 233	63	1 „ 3½
71 „ 81 „	- 38	12	1 „ 3½
	<hr/>	<hr/>	
	1,827	229	

"Now (says the author, in seeking to compare lithotomy and lithotripsy) let us revert to the two great groups, separated from each other by the event of puberty. The great group of infancy and boyhood, ceasing as adolescence begins, say at sixteen years, and comprising more than half the entire number, were operated on with a mortality of 1 in 15½ cases. Subtracting all these, we shall now learn its product in relation to adults. Regarding this great group as composed of all ages above sixteen years—and it matters little to the result whether we commence at that age or at twenty years—we find just 800 individuals left. Among these were 161 deaths, giving a mean of rather more than 1 death to every 5 cases. This, indeed, there can be no question, is a good average result of the operation as applied to average adult males only, eliminating the disturbing influence of the large number of cases under puberty; and it may be said here that this is the total to which the results of lithotripsy are to be brought for purposes of comparison, since that operation is applicable to adults alone."

In the series of 500 cases of stone in the adult treated by Sir Henry Thompson (to take only this group amongst many given by the author), the results are thus given:—

“In the 78 cases of lithotomy there were 29 deaths, or 1 in $2\frac{1}{4}$ cases. In the 422 cases of lithotrity there were 32 deaths, or 1 death in rather more than 13 cases. Taken collectively, in 500 adult cases treated by both operations, there were 61 deaths, or a total mortality of 12 per cent., or 1 death in $8\frac{1}{2}$ cases.”

Throughout the series the smaller and middle-sized stones and the more promising cases were reserved for lithotrity, while as a necessary consequence lithotomy has been employed only for exceptionally large and difficult cases.

Lastly, the results of the operations by Bigelow’s method in Sir Henry Thompson’s hands may be best stated in his own words:—

“It is worthy of remark that at present not one of the 85 cases has been fatal, but this number is insufficient to prove anything, as I once had an unbroken series of 48 cases by the old system without a death.”

Still, though too small to rely on in a statistical inquiry, this result is most encouraging. In the foregoing passages we have quoted some of the most important of Sir Henry Thompson’s conclusions; his tables exhibiting the causes of death after lithotrity, on the structure of calculi, &c., are equally interesting and instructive, while everywhere the work abounds in practical information. In one, we might almost say immaterial, point this edition is inferior to its predecessors—namely, in the execution of its illustrations. Many of these are defective in finish—in consequence, we dare say, from the wearing of the blocks in the printing of the past editions. This fault, though unimportant to the practical surgeon who may require the book as a reference, is calculated to produce an unfavourable impression on the casual reader.

Anatomy, Descriptive and Surgical. By HENRY GRAY, F.R.S.
Ninth Edition. London: Longmans, Green, & Co. Pp. 802.

GRAY’S “Anatomy” is such a popular book with students, and is so well known to the readers of *The Dublin Journal of Medical Science*, that it requires but little recommendation from us to introduce the ninth edition. The principal change which we notice is an increase in the number of the excellent plates, which have

always been the feature of this work. The present additions are to be found in the histological section, and have been borrowed from Klein's "Atlas of Histology." Several errors in points of detail which existed in previous editions have been corrected, and the ninth edition is in every way calculated to increase the reputation of this excellent work.

Archives of Comparative Medicine and Surgery; a Quarterly Journal of the Anatomy, Pathology, and Therapeutics of the Lower Animals.
Edited by EDWARD D. SPITKA. New York: Hyde. Nos. 1 and 3. 1880.

THE establishment of a journal whose aim is to raise Veterinary Medicine and Surgery above the low level of empiricism which so often characterises them, is to be hailed as a real mark of progress, and this magazine, if it continue as it has commenced, will be a decided step in this direction.

Most of the articles are of interest. One on the pathology of pleuropneumonia is fairly well wrought out. A conspicuous feature is the department of notes and memoranda on general points of pathology, &c.

We wish our young contemporary the success it deserves.

Annals of the Anatomical and Surgical Society, Brooklyn, N.Y.
Vol. II. Nos. 7 and 8.

THIS new periodical seems to be increasing in vigour and interest. The July number contains a valuable lecture on Perityphlitis, by Dr. Sands, in which the author commends the use of the aspirator as a help in diagnosis, and cites 26 cases which have come under his own notice—22 in males, 4 in females—the patients ranging in ages from nine to fifty-four. Of these cases 3 died, 10 terminated by resolution; in 2 the abscess opened into the intestine, in 1 into the bladder. 12 were operated on, and of these 2 died.

Among the other matters in this number is an example of cleft apex of the epiglottis, a deformity also recorded in Meckel's "Pathologische Anatomie," Vol. I., p. 485. In the case recorded by Mr. French the patient is a singer with a falsetto voice. Mr. French regards this cleft as related to the facility with which this person produces the falsetto notes. There is no reference to any peculiarity in swallowing.

In the August part of the journal is a lecture on fractures of the lower end of the humerus by Dr. Allis, who explains how in so many of these cases there is a permanent deformity left—the angle formed by the extended arm and forearm being reversed—so that whereas in a healthy arm the humerus and forearm bones when extended form an angle salient inwards, after the occurrence of a humeral fracture involving the elbow-joint, these bones usually are found to form an angle re-entrant inwards. This he proposes to obviate by treating these fractures in the extended position, and kept in place by longitudinal strips of adhesive plaster in two or more layers, or by means of the egg-and-flour bandage. In another paper on the same subject, Ray recommends the use of plaster-of-Paris spread on mosquito netting.

TREATMENT OF POISONING BY CARBOLIC ACID.

IN the *Therapeutical Gazette*, Dr. Gundrum reports the particulars of a case of chronic knee-joint disease, in which over-distension of the abscess-sac with a carbolic acid solution, strength 1 to 40 (Callender's method), was followed by symptoms of a most alarming and almost fatal collapse, due to carbolic acid poisoning, as was clearly proved by the abundant formation of carbolic acid crystals in a portion of the patient's urine after evaporation. A great variety of treatment was tried, without success, to produce a reaction. The patient was almost moribund. A profuse cold clammy perspiration stood out all over his body. The forehead, face, and extremities were as cold as they could well be. The trunk was very cool. The patient lay with his eyes closed, breathing very slowly and superficially. The pulse was perceptible at the wrist only part of the time. In this extremity, Dr. Gundrum proposed the hypodermic injection of atropine as a last resource, having found it useful in several other cases of shock and collapse. Seven drops of a solution, containing one grain to the ounce, were injected into the upper part of the right arm. In fifteen minutes the perspiration was much less, and the skin felt less cold. In twenty-five minutes the whole surface of the body was dry, and the trunk began to feel warm. In one hour from the injection the hands and feet, as well as the whole body, were warm. The pupils were slightly dilated, and there was slight redness—a feeble blush—about the cheeks, neck, and back of the hands, and the lips and ears were of a pale red colour. Entire consciousness rapidly returned, and the patient began to take beef-tea, gruel, &c. He now told those in attendance that he had known nothing since the time the upper abscess had been distended for the third time.—*Lon. Med. Record*, October 15, 1880.

THE
SOCIETY F. R.
MEDICAL
OBSERVATION

PART III. MEDICAL MISCELLANY.

Reports, Transactions, and Scientific Intelligence.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE COLLEGE OF PHYSICIANS.

SESSION 1880-81.

GEORGE JOHNSTON, M.D., President.

ALEXANDER NIXON MONTGOMERY, M.K.Q.C.P., Honorary Secretary.

Wednesday, November 3, 1880.

DR. T. FITZPATRICK in the Chair.

Case of Pericarditis.

THE VICE-PRESIDENT (Dr. Walter G. Smith) exhibited a recent specimen of acute pericarditis, taken from a young man, L. S., aged twenty-six years. He suffered from his first attack of rheumatic fever in 1879; made a good recovery, and seemed to enjoy excellent health, free from any heart trouble, until his present illness. This commenced early in October, 1880, with chills, shivering, and pain. When admitted into the Adelaide Hospital on the 14th October his condition was as follows:—There was a moderate degree of rheumatic arthritis in the wrist and knee-joints, and he could not move in bed on account of pain. But his chief distress consisted in urgent dyspnoea, which was a prominent symptom throughout his illness. The respirations varied from 50 to 60 per minute, being usually more rapid in the morning. The temperature never rose above 104°, except on one occasion, and for the last week of his life it steadily declined. The pulse fluctuated from 100 to 120, and even higher, until the three days preceding death, when it scarcely reached 70 in the mornings. A curious fact in relation to the pulse was observed the day after admission. *The radial pulse was markedly irregular, while the heart beat regularly.* The action of the heart was feeble, the apex-beat almost imperceptible, and the sounds weak and distant. From these signs, and taking into account the nature of the fundamental disease, the probable existence of pericarditis was announced to the class, although

no murmur whatever was detected on repeated examination on several successive days. The patient also complained of pain over the cardiac region, which was relieved by leeching and poulticing; and it must not be forgotten that the dyspncea was far greater than could be accounted for by any physical signs found over the lungs.

Subsequently the action of the heart underwent singular modifications from day to day. At one time its rhythm was triple, on another occasion tumbling, and again of an abrupt thumping character, recalling the sound of a water ram—these perturbations probably indicating an early and grave implication of the muscular tissue of the heart. The area of cardiac dulness was slightly increased, but no murmur was audible until 23rd October, when a rough, whizzing systolic murmur was heard over the base of the heart, sharply localised, transversely, and not transmitted up the vessels. Two days later the murmur could not be heard, at least in the recumbent position. On the 27th October a rough grating sensation could be felt accompanying the tumbling action already referred to. No murmur suggestive of endocarditis or valvulitis was at any time perceptible. There was no evidence of pneumonia or of pleural effusion, and the urine contained a trace of albumen. He soon became delirious, with a startled, anxious expression of countenance; subsultus tendinum was noticed; the respirations increased in frequency, while the pulse fell, until equality in rate was nearly established. He became semi-comatose, and died early in the morning of 28th October.

The *post mortem* examination was made the same day. Body well nourished; abundance of subdermal fat.

Abdomen.—Spleen normal in size, softened, presenting a small haemorrhagic infarction. Kidneys enlarged—right kidney, $8\frac{1}{2}$ oz.; left kidney, 10 oz. On the surface of each were seen large, opaque yellow, firm patches, of irregular form, bounded by sinuous purple edges. These patches upon section were seen to invade the greater extent of the cortex, sometimes intruding between the Malpighian pyramids, with sharply defined edges, and represented very extensive renal infarction. The liver was large, but healthy. Intestines extensively and deeply stained with bile.

Thorax.—A little fluid in each pleural cavity. Recent pleuritis on praecordial lobe of lung, with old pleurisy at left apex. Adhesions at upper part of right lung. Both lungs were tough and leathery, and scarcely crepitated on pressure; lower lobes slate-coloured and congested. Pericardium, adherent to sternum, greatly thickened, exhibited large nodules of lymph in its anterior layer. Upon making an incision the visceral and parietal layers were found united by soft lymph, easily torn through. Epicardium rough and tripe-like over right ventricle; soft puriform and haemorrhagic exudation about base and large vessels. Posterior surface of heart intensely vascular; weight of heart and pericardium

about 80 oz. Large adherent clot in left ventricle, extending up the pulmonary artery. On the endocardium of left ventricle, some distance from mitral valve, there was a projecting tongue of lymph. Small nodular granulations on the sigmoid valves, not only of aorta, but also of pulmonary artery. Mitral and tricuspid valves healthy. Substance of ventricular wall pale and soft.

The case was of interest from several points of view. The diagnosis of pericarditis was made with considerable certainty a week before the distinctive physical evidence of that affection was forthcoming. It is quite possible that a friction murmur might have been detected earlier had the condition of the patient admitted of auscultation in the upright position. Stress was laid upon the feebleness and variability of the heart-sounds, weak apex-beat, with increase of cardiac dulness, but more especially on the notable discrepancies that existed between the cardiac sounds and impulse on the one hand and the radial pulse on the other. The irregularity of the pulse while the heart beat regularly seems to bring the case within the category of cases described by Griesinger and by Kussmaul, who introduced the term "pulsus paradoxus." Various explanations have been suggested of this curious phenomenon. When, as in the above case, extreme thickening of the pericardium exists along with more or less mediastinitis, it is possible that Kussmaul's explanation may hold good. For when the great vessels at the base of the heart are imbedded in the thickened connective tissue, and the pericardium is adherent to the back of the sternum, the inspiratory distention of the thorax will, through means of the adhesions, drag on the aorta, and tend to constrict it. Consequently during inspiration less than the normal quantity of blood will find its way into the aorta, and so it will happen that the radial pulse is enfeebled or may disappear during a full inspiration, especially whenever it chances that a feeble heart-beat coincides with inspiration. During expiration, on the contrary, especially when coincident with a stronger heart-beat, the pulse will be relatively full and strong. It is, however, plain that this hypothesis does not answer for all cases, inasmuch as the *paradoxical pulse* occurs not only in exudative pericarditis with and without mediastinitis, but it has also been observed in a healthy individual. It is to be regretted that, in the case of L. S., the gravity of his illness and the rapidity of his respirations precluded any observations being made as to the effects of a forced full inspiration upon the radial pulse.

DR. HAYDEN said that in the case just narrated by Dr. Smith it appeared to him that the first event of the pathological series was myocarditis, which travelled slowly from within outwards, contrary to the usual course, and ultimately involved the pericardium in a common inflammatory process, constituting a myo-pericarditis. During the outward progress of inflam-

mation from the substance to the surface of the heart, extending over a period of several days, the signs of pericarditis were in abeyance, because pericarditis had not been yet developed. That the substance of the heart was involved in its entirety was proved by its softened condition and by its colour-stratification; and, further, the relative position of the lighter and darker coloured strata, as exhibited on the surface of section of the left ventricle, would seem to show that inflammation had commenced deeply in the substance of the heart and travelled towards its outer surface. The faltering character of the pulse in the early stages of the case, and long before pericarditis was announced by physical evidence, would also go to show that the myocardium was even then seriously involved, and would be adequately explained by that assumption without having recourse to the transcendental hypothesis of traction upon the great vessels at the base of the heart, during inspiration, through the adhesions produced by an exo-pericarditis. If such were the cause of the irregularity and partial failure of the pulse, the latter should be rhythmical, and should coincide with inspiration, but Dr. Smith does not inform us that such was the case. He further observed that the pulse exhibited this character long before there was proof of pericarditis, and at a period when, even though pericarditis were present, adhesion could not have taken place. He was free to admit that centrifugal myocarditis not originating in the endocardium is unusual, but it is occasionally met with in connexion with gout, scorbutus, and septicæmia. The pericarditis in this case was hæmorrhagic—a form of the affection most frequently exhibited by the subjects of scurvy and blood-poisoning.

DR. J. MAGEE FINNY.—While I acknowledge with Dr. Hayden the importance of recognising the existence of myocarditis as an early complication of pericarditis, and agreeing in his explanation of this inflammatory action of the heart being quite sufficient to explain the weakness and irregularity of the heart, I wish to direct attention to the prominent symptoms to which Dr. Smith has referred, because I do not think Dr. Smith has at all made plain that the *pulsus paradoxus* did exist in this case, in the sense in which I understand that term, and that, granted it did exist, Dr. Smith's plausible explanation of its cause does not hold good. The *paradoxical pulse* is not so much an irregular pulse as a retardation—a slowing of, and a lowering of, the pulse on inspiration. These features were not very plain in Dr. Smith's case. All he showed was an irregularity of the radial pulse, and in the weakened wall of the ventricle we have satisfactory explanation for this symptom. Again, granted that the true paradoxical pulse did exist, the slight and soft adhesions which occurred in this case between the layers of the pericardium and outside the pericardium in the mediastinum would not be adequate to produce it—since, when it is at all an evidence of disease

(for it must be remembered that it has been noticed in persons who never had pericardial or pleural disease), it is indicative of an adherent pericardium or pleura, or an effusion into the pericardial sac. None of these pathological states occurred in Dr. Smith's case. Besides the view of coexistent myocarditis causing the irregularity of the pulse, might not the endocardial complication of acute inflammation of the aortic and pulmonary valves be an additional explanation? Dr. Smith referred to a systolic basic bruit, and though he referred it entirely to the pericarditis, might it not also be produced by the coexistent valvulitis—the one physical sign masking, perhaps, the other?

Neurosal Palpitation. By WALTER BERNARD, F.C.P.I., Londonderry; late Principal Medical Officer, 3rd Division Army Works Corps, Crimea.

In the first place I propose to say a few words about the interesting case of aggravated palpitation which I, on a previous occasion, introduced to the Society, and which many of you recollect.*

The patient at that time exhibited the three great characteristic symptoms of Graves' disease. The protrusion of the eyeballs and the enlargement of the thyroid were by no means in proportion to the palpitation, which was very severe. There was a strange look about the eyes—a peculiar staring expression—and slight prominence of the eyeballs. The middle lobe of the thyroid (as pointed out by Dr. Hayden) was slightly enlarged. The pulse was abnormally frequent. There was no evidence of hypertrophy, nor of organic disease of the heart. Some time after this he took a voyage to America. On the third morning after leaving Ireland, as he was walking on the deck after breakfast, he "felt something falling down in the left side," and immediately afterwards the palpitation ceased. When he landed he was able to go through a good deal of work without any unpleasantness. On his return from America the pulse beat at the rate of 74 to 80 in the minute, the heart's action was tranquil, and he had lost the strange look about the eyes. He is now at work as a school-teacher, and is quite free from his former troubles.

Trousseau says that Stokes "places in too subordinate a position the other phenomena of the disease compared with the functional lesion." In this case certainly the cardiac lesion was of paramount importance.

The interest of this case lies chiefly in (1) the difficulty which attended the diagnosis, (2) the sudden and complete recovery, (3) the want of proportion which existed between the palpitation and the other great characteristic symptoms of Graves' disease.

DR. HAYDEN.—The case of neurosal palpitation exhibited to the Society last April by Dr. Bernard, and further reported of by him

* Reported in *The Dublin Journal of Medical Science* for May, 1880, p. 441.

this evening, is, as I regard it, an example of exophthalmic goitre, in which palpitation with rapidity of pulse is far in excess of the other two legs of the symptomatic *tripos*—proptosis and thyroid enlargement. The man has made a report of his own case, from which it would appear that on one occasion the pulse attained a rate of 242 in the minute. This was during one of his paroxysms, and consequent upon the nervous excitement produced by a misadventure in a tram-car. I am personally unacquainted with a pulse-rate higher than 210. Dr. Bowles has recorded, in *The British Medical Journal*, a case in which it reached 250. When this man was exhibited to the Society in April there was no difficulty in excluding organic disease of the heart—an opinion which comforted the patient, although it did not convince him. He subsequently, as reported in his own narrative of his case—kindly placed in my hands for perusal by Dr. Bernard—made a voyage to New York, and on his arrival there was obliged, greatly to his horror, to carry his own luggage on shore in the general scramble to disembark; but he found, to his great delight, that the effort, of which he could not previously have believed himself to be capable, actually relieved him of all his urgent symptoms. From this occurrence dates his recovery. He is now quite well, and discharging the trying duties of a high-class school-teacher. Exophthalmic goitre in males is comparatively rare—about one in six cases.

DR. H. KENNEDY remarked that Dr. Bernard's patient had been afflicted with worms when a young man. He also had suffered from epistaxis on his journey to town, shortly before he was examined at that Society.

MR. SWANZY said that one of the most remarkable points in connexion with Dr. Bernard's patient was his sex—Graves' disease in men being very rare. He remembered having seen but one case of the disease in the male. The patient presented himself at von Graefe's Clinique in Berlin, when he was there as Assistant. He was a shop assistant, aged about twenty-two years, and a few days previously had endeavoured to have connexion with a girl, but had encountered active opposition on her part. The struggle lasted a considerable time, at the end of which, having failed in his attempt, he was utterly exhausted, and the cardiac palpitation which came on during the struggle did not cease. Next day the eyeballs began to be prominent and the throat to swell—in short, he had acquired well-marked exophthalmic goitre. The case excited much interest by wandering from one clinique to another in Germany in search of a cure, and has been recorded in Graefe and Scœmisch's "Handbook of Diseases of the Eye."

The Diagnosis of Enteric Fever.

DR. WALTER BERNARD, of Londonderry, read a paper entitled "Remarks on the Diagnosis of Enteric Fever." [It will be found at page 469.]

DR. H. KENNEDY referred to the occurrence of cases of enteric fever, in which there were successive crops of typical rose spots, while the other characteristic symptoms of the disease were wanting.

MR. SWANZY, in answer to a question addressed to him by the author of the paper, thought it was of the utmost importance that the ophthalmoscope should not be overrated in connexion with medical diagnosis. If this error were committed the true usefulness of the instrument might suffer. The only form of tubercular disease which can be diagnosed with the ophthalmoscope is acute miliary tuberculosis. In a few cases of this disease miliary tubercles occur in the choroid. When present they are situated not far from the optic disc, and present the appearance of minute white specks. In typhoid fever there is never any specific ophthalmoscopic sign.

DR. FINNY laid stress on the significance of a slow pulse-rate compared with the height of the temperature, as bearing on the diagnosis of enteric fever. Even with high temperatures the pulse rarely exceeded 100 in the earlier stages of the disease.

SURGEON-MAJOR JACKSON confirmed Dr. Finny's observation.

DR. HAYDEN remarked that a pulse-rate under 100, in combination with a febrile temperature of 102° to 104°, was peculiar to simple typhoid—that is, the fever uncomplicated with serious pulmonary or other disease.

DR. J. W. MOORE spoke of the difficulty experienced by his colleague, Dr. Reuben J. Harvey, and himself in the present epidemic of typhus in establishing a differential diagnosis between enteric fever and mild cases of typhus—instances of "typhisation à petite dose." In several cases of typhus, recently treated at Cork-street Fever Hospital, taches bleuâtres were observed, and diarrhoea was often present. With Dr. Bäumler, of Freiburg, he regarded an examination of the spleen as of considerable importance in arriving at a diagnosis of enteric fever.

DR. W. G. SMITH was sceptical as to enteric fever running its course without a pyrexial temperature. He considered the occurrence of ochrey stools and an enlargement of the spleen as of much diagnostic value.

DR. BERNARD, in reply, referred Dr. Smith to the following passage in Dr. Cayley's lectures in *The British Medical Journal* of April 3, 1880 (page 507):—"Many cases and even epidemics of typhoid have been met with in which the temperature has been subnormal throughout the whole course of the disease. One such epidemic has been reported by Dr. Strube."

The Society then adjourned.

THE BOSTON
SOCIETY FOR
MEDICAL
OBSERVATION

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF
DUBLIN.

President—ARTHUR WYNNE Foot, M.D.
Secretary—E. H. BENNETT, M.D.

Stump after Syme's Amputation.—MR. WHEELER said: The history of the specimen I have here to show is as follows:—In November, 1879, the patient from whom this limb has been taken leaped from a wall about four feet high, causing compound dislocation of his right ankle-joint. He was taken to an hospital in the part of the country where the accident occurred, and remained under treatment for about eleven weeks. He suffered traumatic fever during this period. In March, 1880, I first saw him, when his limb presented the appearance seen in this cast—namely, dislocation of the tibia forwards through the skin, the protruded end of the bone being carious, the foot was extended and pointed, and much thickening existed, the result of old inflammatory action. On the 11th of March, 1880, I removed the foot by means of Syme's amputation; the case progressed favourably to cure. Contrary to advice, he got an artificial foot a week or so after the completion of the healing process, the result being that inflammation of the stump was set up, and caries occurred, as is here seen, in the end of the tibia. Abscess formed in three places, corresponding to the three openings to be observed. I should have noticed that the patient had suffered from specific disease. On the 13th of August I amputated his leg below the knee; the patient rapidly recovered. I regret I have not the cast to show the appearance of the stump. What I wish to draw your attention to especially is the result of the Syme amputation, as seen here five months after the operation had been performed. You can see here the splendid stump that resulted, the firmness of it, and the amount of connective tissue development. The thickness of the covering is about one inch and a quarter. This specimen I thought interesting, and worthy of being brought forward. I am informed it is the first of the kind has been exhibited at this Society.—November 6, 1880.

Exophthalmic Goitre.—DR. A. W. FOOR laid before the Society the eyeballs, thyroid gland, and heart taken from a patient who had been a marked example of Graves' disease (exophthalmic goitre). The subject of the case had been a young woman, twenty-two years of age, who died of typhus on the twelfth day of the fever. At the time of her death the

disease had existed for six months. The organs laid before the Society were those which are primarily looked to in the rare opportunities which occur for making *post mortem* examinations in this not very common disease. They are looked to because their distortion of shape and function rivet attention to them during life, and yet after death they exhibit only secondary changes, which are referable to antecedent nerve lesions, the seat and nature of which is still a matter of unsettled discussion. It will be at once observed that the eyeballs are not larger than usual, although their symmetrical prominence was most conspicuous during life, as the admirable drawing (laid on the table) shows. They did not shrink or retract after death to anything like the degree usual in corpses, and forty-eight hours after death the eyelids were still quite unable to cover them. There is, however, a notable quantity of adipose tissue behind and around the globes. This intra-orbital accumulation of fat has been noticed so often in this disease that it has been regarded as the chief explanation of the exorbitism. The question whence the increase of orbital fatty tissue comes is not yet answered; but it has been suggested that it may be connected with the vasomotor trophic fibres running in the sympathetic. The older idea that the prominence of the eyes was due to intra-ocular distension from increase of the aqueous and vitreous humours—that it was virtually a hydrocephalus—has been justly abandoned, because such a state of things could not exist without disturbances of vision and ophthalmic appearances which are not observed to be present in this disease; and the most recent views on the cause of this phenomenon—the exorbitism—are that venous congestion and retro-bulbar growth of fat play the chief part in its production, while the participation of the smooth orbital muscles connected with the capsule of Tenon and supplied by the sympathetic nerve cannot be wholly excluded.

The thyroid gland is not of very great size, nor was it very voluminous at any period while the case was under observation, and it had already been greatly reduced in bulk by treatment when she contracted the fever which proved fatal. It is condensed and firm in structure, as if the congestion to which it was subject had provoked a hyperplasia of the connective tissue of the organ.

The heart does not present the changes of structure, dilatation, and hypertrophy of both ventricles, which have been observed in other cases, probably on account of the comparatively short time the disease had been in existence. When removed from the body and emptied of coagula, it weighed nine and a half ounces.

The cervical sympathetic was examined on both sides with as much care and skill as he (Dr. Foot) could command, and the results were negative, the ganglia and cords appearing to the naked eye as usual in ordinary bodies.

It is not at all settled that the seat of the disease is really in the cer-

vical sympathetic, Benedikt and others placing it in the medulla oblongata or in the higher regions of the cervical medulla.—November 6, 1880.

Fracture of Os Calcis.—DR. C. B. BALL said: This specimen is one of fracture of the os calcis, occasioned by muscular action, and was taken from the body of a man who, when aged sixty-five years, was working at the top of a blast furnace in May, 1873; he felt the staging on which he was standing giving way, and made a violent effort to jump off; he succeeded in doing this, but, at the same time, fractured his right os calcis. The fracture is united by bone. The symptoms of the injury were very evident; the upper fragment was drawn upwards by the tendo Achillis about an inch and a half, and between the fragments a deep sulcus could be felt; the displacement could be decreased considerably by extending the foot and flexing the leg. The case was treated like one of rupture of the tendo Achillis by a slipper, the heel of which was attached by a strap to a collar round the lower third of the thigh. This treatment was maintained for a month, after which a dextrine bandage was worn for two weeks. The patient recovered good use of his foot, extension only being slightly impaired. He was killed five years afterwards by a locomotive engine, when I was enabled to procure the specimen. On looking at the macerated bone we find that a fracture has passed horizontally across the middle of the posterior aspect of the bone, chipping off a wedge-shaped piece, the base of which looks directly backwards, and the apex towards the astragalus. At the posterior extremity of the fracture the fragments are separated a distance of one and a quarter inches, but anteriorly there does not appear to be much displacement. Through the courtesy of Professor E. H. Bennett I am enabled to exhibit to the Society a specimen of fracture of the os calcis, in which ligamentous union has taken place, and which was evidently caused by muscular action. It was found in the collection of the late R. W. Smith, but it does not appear ever to have been described, and no history of it is known. It will be seen that the displacement in both these instances is almost identical, and it becomes a point of interest to determine the cause of this remarkable deformity. Mr. Holthouse, in "Holmes' Surgery," speaking of the varying degrees of displacement in this fracture, says:—"The difference is probably owing to the part at which the fracture has taken place, and whether the posterior fragment is completely isolated from the rest of the bone, or is partially connected with it by the fibrous structures in the sole." It is evident, however, from an examination of these specimens, that the fractures have nothing whatever to say to the sole of the foot, neither of the inferior tubercles of the calcaneum being separated. I think, however, we can find an explanation of this condition in the attachments of the posterior calcaneo-astragaloïd ligament. I have made a section of a recent os calcis in the direction taken by the

fracture in both these instances, and it will be seen that while the posterior portion or base of the wedge can be separated from the lower fragment to a distance of nearly two inches, the anterior portion or apex of the wedge is prevented from going upwards by the attachment to it of the posterior calcaneo-astragaloid ligament, which acts like a hinge. Malgaigne has collected but eight cases of fracture "par arrachement," and from the way in which these have been recorded he appears to doubt the occurrence of fracture by muscular action, and I have been able to find only four others put on record since his time, in none of which does it appear that the final result has been examined by dissection, so that I believe these cases to be unique.—November 6, 1880.

Fracture of the Os Calcis.—DR. E. H. BENNETT exhibited an example of comminuted fracture of the os calcis, the fracture "par écrasement" of Malgaigne, and gave the following account of the case:—

He said: The patient from whose body I removed this specimen was a middle-aged man, a mason, admitted to the surgical wards of Sir Patrick Dun's Hospital 28th October, 1880. During the stormy weather last week he was employed repairing the chimney of a two-story house, and, losing his hold, he fell to the pavement. He was bruised on the left side of the forehead, and had a Colles' fracture of the left radius and an injury of the left foot. He was able, with help, to hop along on his right limb, but could not attempt to put the left beneath him so as to bear his weight. The deformity of the Colles' fracture was extreme, and crepitus was easily elicited in the examination of it. A trivial skin wound, remote from the fracture, existed on the palmar surface of the forearm. The resident pupil having reduced the fractured radius, applied the ordinary apparatus. He next examined the injured foot, but could arrive only at a suspicion of fracture of the os calcis. There was no deformity, and no fracture of the bones of leg near the ankle, but the violence of the pain on pressure or motion of the heel, with a doubtful crepitus, caused him to suspect a fracture. No treatment beyond rest in bed appeared necessary for the injured foot. On seeing the patient next morning I was satisfied with the condition of the forearm, and did not attempt to verify the diagnosis, the limb being too much swollen and too painful for such investigation. Examining the heel, without having heard that a fracture of the os calcis was suspected, I arrived at the same conclusion as my resident pupil had done—that a fracture was probable, but that I could not prove its existence.

I saw nothing to cause alarm in the condition of the patient, although he was extensively bruised on the left side. During the day the appliances on the forearm were twice loosened and adjusted to relieve the pain of which the man complained. Next morning the hand and forearm were evidently becoming gangrenous. By midday the gangrene had

spread to the axilla, and the patient had become yellow, while he was delirious. The next morning he was evidently sinking, the gangrene having extended to the thoracic parietes. He died shortly after midday on this the fourth day. The next morning I made the *post mortem* examination, but already decomposition had so altered the body I could only examine the fractures. The entire body was distended with gas, and the scrotum was quite inflated. On piercing it with a trocar and cannula, a jet of gas escaped with a rushing sound, and on being set fire to burnt with a clear blue flame. In this condition of affairs I abandoned the detailed examination of the vessels of the injured arm. The details of the Colles' fracture I reserve until I can present them with a group of similar injuries I have recently obtained. My present object is to direct attention to the clinical characters of the fracture of the *os calcis*. Malgaigne records that he himself, Voillemier, and Bonnet, have mistaken this fracture for fracture of the fibula without displacement. In a specimen which I exhibited to this Society in 1874, in which the lines of fracture are identical with the present specimen, the same error was made. In this instance the swelling of the ankle was so trivial that the examination of the fibula was easily made and its integrity proved, but the positive evidence of fracture of the *os calcis* was most scanty. Even in the *post mortem* room, when the pain of severe pressure no longer embarrassed the examination, I could barely produce crepitus by handling the heel; yet in the specimen we see the entire body of the bone detached from the heel process, and split into innumerable fragments; the prime fractures start in the articular surfaces for the astragalus and cuboid, as in the recorded examples of the injury, but the cancellated tissue of the interior of the bone is so crushed that it cannot be restored to its place. Certainly anyone not familiar with this injury would be slow to believe that such complete smashing of the bone could exist without very evident signs during life, but such are the phenomena which this injury constantly presents.—*November 6, 1880.*

Fracture of the Os Calcis.—**MR. P. S. ABRAHAM** said: This specimen of fractured calcaneum, which I am fortunately able to show as a rider to the communications of Professor Bennett and Dr. Ball, presents several points of interest. It is a good example of the crushed fracture, or “fracture par écrasement” of Malgaigne, and yet differs somewhat from the examples described by that authority, as well as slightly from those in Dr. Bennett's possession. As the larger articular surface for the astragalus and a part of that for the cuboid are denuded of cartilage, rough and irregularly pitted, and the whole bone shows so many rugose osseous outgrowths, with occasional tendency to eburnation, one can understand how, in superficial examination, and in the complete absence of any history, the specimen should have been put down, as was the case,

for one of rheumatic arthritis. Dr. Bennett was, I believe, the first to suspect its true pathological nature, and it was at his suggestion that I examined it with care.

The first thing to be noticed is the great widening out and apparent flattening of the bone—I say apparent, for on measurement through the thinnest part, and comparison with an ordinary bone, no considerable difference in thickness was found to exist. In this respect, therefore, my specimen differs from Malgaigne's examples. The superior surface of the bone shows two main, deep, but irregular furrows indicative of lines of fracture—one, the larger, transversely across, and near the anterior border of the large articular surface; the other longitudinal, and near the external side of the bone.

The place of fracture is deducible from the following measurements which I have taken :—

	A. Of the specimen, millimetres.	B. Of a normal bone (reduced to length=100).	Percentage difference.
Extreme length of bone, -	100	100	-
Length from tuberosity to top of articular surface of cuboid, -	92	100	-
Length from tuberosity to articular surface of sustentaculum, -	68	80	12
Extreme breadth of bone (between inner side of sustentaculum and peroneal groove), -	75	54	21
Extreme breadth across neck (just in front of tubercles), -	50	36	14
Least thickness of neck, -	27	30	3

The above figures bring out :—

1. That the principal change of shape consists in a widening out in front.

2. That this is mainly opposite the sustentaculum, and that here was the greatest lateral separation of fragments.

3. That there is some shortening between the posterior aspect of the bone and the sustentaculum—pointing to a slipping backwards of the sustentacular fragment.

These conclusions have been corroborated by the two sections which I have recently made through the bone—one being horizontal, the second vertical and diagonal in direction. The largest fracture appears to be transverse and quite through and across the bone, in a line from the sustentaculum to the peroneal tubercle, and slanting downwards and forwards. Meeting this are at least three others—one corresponding with the longitudinal superficial furrow first spoken of; a second, extending longitudinally and vertically from nearly its centre to the

articular surface from the cuboid; and a third, meeting at the same spot and coming from in front of the peroneal tubercle. There is, further, some evidence of another place of fracture, diagonal and slanting, upon which the sustentacular fragment must have slipped. Upon the whole, it appears to me probable that the fracture must have primarily originated in sudden wedge-like pressure of the anterior border of the articular surface of the astragalus upon the front part of the corresponding surface of the os calcis.—*November 6, 1880.*

INTERMITTENT ARTICULAR DROPSY.

DR. SEELIGMÜLLER (*Centralbl. f. Chir.*, June 19, 1880) records a case of intermittent dropsy of several joints, occurring in a patient who was under his observation since 1875. The disease existed twenty-five years. The patient had had an attack of typhoid fever in 1846, a pneumonia in 1849, and was seized in the same year with intermittent fever, lasting seventeen weeks. In 1855 he suffered from a painful tension, affecting alternately the left knee and hip-joint, lasting about one day or thirty-six hours, and occurring every twelve days. The attacks were accompanied by moderate swelling of the knee-joint. After continuing for some time they gradually disappeared, but returned again with greater severity in 1861. This time the patient was afflicted with them for three months. He suffered again in 1865, then in 1872, and since the year 1875 has never been quite well. A very severe attack, with considerable articular tumefaction, was observed in 1879, and resisted all medication. The most prominent symptoms of these seizures were the painfulness and the swelling of the knee-joint. Severe attacks would deprecate his general health, but a rise of temperature was never observed. The usefulness of the joints had not been impaired. In addition to this case, Dr. Seeligmüller mentions twelve other cases, which he has collected from various sources. All these cases have certain symptoms in common: an otherwise healthy adult is attacked at regular intervals, without prodromal symptoms and without assignable cause, by a painful tumefaction of one or both knee-joints. The absence of all inflammatory symptoms, as well as of any febrile movement, appears to be characteristic of these seizures. The swelling is marked by a stage of increase (*stadium incrementi*), by a stage of stability (*stadium acmes*), and by a stage of decline (*stadium decrementi*). The rhythm of recurrence varies from an eight days' type to one of four weeks' interval. Quinine and arsenic have been recommended, but an effectual and reliable therapy has not yet been found. Seeligmüller finally admits that the true nature of these attacks is not yet definitely known, although, personally, he is inclined to regard the disease as a vasomotor neurosis.—*New York Med. Record*, August 28, 1880.

THE DUBLIN
SOCIETY FOR
MEDICAL
OBSERVATION

TRANSACTIONS OF THE ULSTER MEDICAL SOCIETY.

SESSION 1879-80.

President—PROFESSOR DILL, M.D.

Hon. Secretary—WILLIAM WHITLA, M.D.

July, 1880.

PROFESSOR DILL, President, in the Chair.

On the Infantile Mortality of Belfast. By DR. C. D. PURDON.

THE necessity of inquiring into the diseases that cause the great mortality amongst children under $2\frac{1}{2}$ years of age, was forced on my attention by the desire that was expressed in a late meeting of the Medical Officers of Health at one of their annual reunions. So in examining the register of the Belfast Factory district along with my friend, Dr. Newett, of Ligoniel, for the purpose of ascertaining the relative mortality of the various classes into which the population is divided—viz., the Factory, Artisan, and Labouring, the Professional, Mercantile, and Gentry—I considered it advisable to ascertain the death rate according to the births in each class. As the great mortality among infants is under $2\frac{1}{2}$ years, and as after this period the critical affections of infancy are generally over, I have selected that time as the limitation under this head for my investigation, dividing this period under two general heads—viz., deaths occurring under 1 year and under $2\frac{1}{2}$ years. As the district consists of a town and country division, I have kept the death rates separate, so as to enable the reader to compare the relative mortality in each. In all the tables that I have seen the death rate has been given without specifying the diseases; so, in the first place, I have given the entire death rate in the town and country according to the number of births, without specifying the diseases; and, in the second place, the four diseases in which I have classed the various causes of death in each class, showing the relative percentage of deaths from each disease in each class under one year and the next year and a half.

The tables have been made for 10 years, from 1864 to 1873 inclusive, and are divided into two equal periods. In the first quinquade the number of births in town in the factory class was 2,221; in the artisan, &c., 22,780; in the gentry, 551—total, 25,552. In the second quinquade the births in the factory, 2,737; in the artisan, &c., 28,206; in

the professional, middle, &c., 772—total, 31,715; total for 10 years, 57,267.

In the country districts—viz., Ligoniel, Whitehouse, and Carmoney, in the first quinquade, the births in the factory class were 527; artisan, &c., 1,978; professional and gentry, &c., 107—total, 2,612. In the second quinquade, in the factory class, the births were 486; in the artisan, &c., 1,804; in the professional, gentry, &c., 68—total, 2,358; total for 10 years, 4,970. This sum added to the number that were born in the town districts, gives a total number of births of 62,287. In the factory district the statistics are calculated according to the births per centum; so taking the deaths from all causes in the town districts among the factory class under 1 year in the first quinquade, we find it amounts to 14.5 per cent.; in the next 1½ years, 6.7 per cent.—total, 21.2. In the second quinquade, under 1 year, 22.8 per cent.; in the next 1½ years, 7.3 per cent.—total, 30.1 per cent.; average death-rate for 10 years amounts to 26.1 per cent. In the artisan and labouring classes the average death-rate amounts, in the first quinquade, under 1 year, to 15.9 per cent.; in the next 1½ years, 7.8—total average, 23.7 per cent. In the second quinquade, average under 1 year, 16.9 per cent.; in the next 1½ years, 8.1—total average, 25.0.

In the mercantile, &c., total average of deaths in the first quinquade, under 1 year, was 5.8; in the next 1½ years, 2.3—total average, 8.1. In the second quinquade, deaths under 1 year, 18.9 per cent.; in the next 1½ years, 4.1—total average, 23.0. I may mention that scarlatina was a complete scourge during this period.

In the country districts the causes of death in the factory class, under 1 year, for the first quinquade, the average amounted to 17.8 per cent.; in the next 1½ years, amounted to 8.2 per cent. In the second quinquade the average was 16.7 per cent. for those under 1 year; in the next 1½ years the average was 7.4 per cent., making, in the first period, a total of 26.0 per cent.; in the second period, 24.1 per cent.

In the artisan and labouring classes the average percentage of deaths, under 1 year, in the first quinquade was 12.3; in the next 1½ years, 4.9 per cent. In the second quinquade the average, under 1 year, was 13.7 per cent.; in the next 1½ years, 5.9 per cent., making a total, in the first period, of 17.2 per cent.; in the second, 19.6 per cent.

In the professional, mercantile, and gentry, the average percentage of deaths, in the first quinquade, under 1 year, was 5.6 per cent.; in the next 1½ years, 2.8 per cent. In the second quinquade the average of deaths, under 1 year, was 14.7 (caused by zymotic diseases); in the next 1½ years, 4.4 per cent., making a total of 8.4 per cent. for the first period, and 19.1 per cent. for the second.

In order to ascertain the relative mortality from various diseases I have divided the causes of death into four general heads—viz., Inflamm-

matory (Surgical), Zymotic, Phthisis and diseases of the respiratory organs, and Neurotic disease, keeping the classes and districts separate as before, also dividing them into two quinquades.

In the town districts, in the factory class, the average death rate from Inflammatory affections in the first quinquade was 3·1 per cent., under 1 year, in the next 1½ years was 1·7 per cent.; in the second quinquade, under 1 year, was 4·6 per cent., in the next 1½ years was 1·5 per cent.

From Zymotic disease, in the first quinquade, the average death rate was 2·8 per cent. under 1 year, in the next 1½ years 2·2 per cent.; in the second quinquade the average death rate, under 1 year, was 4·8 per cent., in the next 1½ years 2·4 per cent.

From Phthisis, &c., the average death rate, in the first quinquade, under 1 year, was 4·5 per cent., in the next 1½ years 1·9 per cent.; in the second quinquade, under 1 year, 9·2 per cent., in the next 1½ years 2·6 per cent.

From Neurotic affections the average death rate in the first quinquade, under 1 year, was 4·1 per cent., in the next 1½ years 0·9 per cent.; in the second quinquade, under 1 year, was 4·5 per cent., in the next 1½ years 1·0 per cent.

In the artisan and labouring class the average death rate from Inflammatory affections in the first quinquade was 3·3 per cent., in the next 1½ years 2·1 per cent.; in the second quinquade was 3·7 per cent., in the next 1½ years 1·8 per cent.

From Zymotic diseases the average death rate in the first quinquade, under 1 year, was 2·9 per cent., in the next 1½ years 2·6 per cent.; in the second quinquade, under 1 year, 2·7 per cent., in the next 1½ years 2·7 per cent.

From Phthisis, &c., the average death rate in the first quinquade, under 1 year, was 5·8 per cent., in the next 1½ years 2·2 per cent.; in the second quinquade, under 1 year, the average death rate was 7·2 per cent., in the next 1½ years 2·4 per cent.

From Neurotic diseases the average death rate, under 1 year, in the first quinquade was 3·7 per cent., in the next 1½ years 1·0 per cent.; in the second quinquade the average death rate, under 1 year, was 3·2 per cent., in the next 1½ years 1·1 per cent.

In the gentry, &c., classes the death rate from Inflammatory affections in the first quinquade, under 1 year, was 1·2 per cent., in the next 1½ years 0·4 per cent.; in the second quinquade, under 1 year, the average death rate was 6·7 per cent., in the next 1½ years 1·5 per cent.

From Zymotic diseases the average death rate in the first quinquade, under 1 year, was 0·5 per cent., in the next 1½ years 1·2 per cent.; in the second quinquade, under 1 year, the death rate was 3·4 per cent., in the next 1½ years 0·6 per cent.

From Phthisis, &c., the average death rate, in the first quinquade,

under 1 year, was 1·8 per cent., in the next 1½ years ·0; in the second quinquad the average death rate under 1 year was 5·4 per cent., in the next 1½ years 1·5 per cent.

From Neurotic diseases the average death rate, under 1 year, in the first quinquad was 2·4 per cent., in the next 1½ years 1·2 per cent.; in the next quinquad the average death rate under 1 year was 3·2 per cent., in the next 1½ years 0·5 per cent.

In the country districts, in the factory class, the average death rate, under 1 year, from Inflammatory affections, in the first quinquad, was 4·7 per cent., in the next 1½ years 2·8 per cent.; in the second quinquad the death rate under 1 year was 2·9 per cent., in the next 1½ years 1·6.

From Zymotic diseases the average death rate, in the first quinquad, under 1 year, was 2·6 per cent., in the next 1½ years 1·7 per cent.; in the second quinquad the average death rate under 1 year was 2·5 per cent., in the next 1½ years 2·2 per cent.

From Phthisis, &c., the average death rate, under 1 year, in the first quinquad, was 4·0 per cent., in the next 1½ years 1·9 per cent.; in the second quinquad the average death rate under 1 year was 8·0 per cent.; in the next 1½ years 2·7 per cent.

From Neurotic affections the average death rate, under 1 year, in the first quinquad, was 6·4 per cent., in the next 1½ years it was 1·7 per cent.; in the next quinquad the average death rate under 1 year was 3·3 per cent., in the next 1½ years 0·8 per cent.

In the artisan and middle classes the average death rate, from Inflammatory diseases, under 1 year, in the first quinquad, was 3·2 per cent., in the next 1½ years 1·6 per cent.; in the second quinquad the average death rate under 1 year was 2·9, in the next 1½ years 2·3 per cent.

From Zymotic diseases the average death rate, under 1 year, in the first quinquad, was 1·4 per cent., in the next 1½ years 1·4 per cent.; in the second quinquad the average death rate under 1 year was 1·1 per cent., in the next 1½ years 1·4 per cent.

From Phthisis, &c., the average death rate, in the first quinquad, under 1 year, was 3·8 per cent., in the next 1½ years 1·4 per cent.; in the second quinquad the average death rate under 1 year was 6·9 per cent., in the next 1½ years it was 1·7 per cent.

From Neurotic affections the average death rate, in the first quinquad, under 1 year, was 3·8 per cent., in the next 1½ years 0·6 per cent.; in the second quinquad the average death rate under 1 year was 2·8 per cent., in the next 1½ years 0·5 per cent.

In the gentry, professional, and mercantile classes the average death rate from Inflammatory affections, in the first quinquad, under 1 year, was 2·1 per cent., in the next 1½ years ·0; in the second quinquad the average death rate under 1 year was 2·9 per cent., in the next 1½ years 2·9 per cent.

From Zymotic affections, in the first and second quinquades, there were no deaths in the two periods.

From Phthisis the average death rate, in the first quinquade, under 1 year, was 1·9 per cent., in the next 1½ years ·0 per cent.; in the second quinquade the average death rate under 1 year was 8·8 per cent., in the next 1½ years 1·5 per cent.

From Neurotic diseases the average death rate, in the first quinquade, under 1 year, was 1·9 per cent., in the next 1½ years 1·9 per cent.; in the second quinquade the average death rate, under 1 year, was 1·5 per cent., in the next 1½ years 1·5 per cent.

Such are the results that have appeared from the examination of the registries of the district, which show that the mortality among the infants is so great that special attention should be directed to the exciting causes of those diseases that annually carry off so many of our young to an untimely grave; but though the Legislature has been forced by the representations of medical societies to do a good deal in favour of society, yet more is required at their hands before our infant population is placed in a proper sanitary state. I regret very much that I have not been able to give during this period the state of the barometer, thermometer, wind, and rain—four great factors of our health:—

TABLE No. 1.—*Infantile Mortality in Castlereagh District.*

TABLE No. 2.—*Infantile Mortality in Belfast.*

TABLE No. 2.—*continued.*

Year		Factor Class				Labouring, Artisan, and Middle Classes								Mercurial, Professional, and Gentry								
		Born	Died at 1 year	Average	Died at 2½	Born	Died at 1 year	Average	Died at 2½	Born	Died at 1 year	Average	Died at 2½	Born	Died at 1 year	Average	Died at 2½	Born	Died at 1 year	Average	Died at 2½	
District No. 6	1864	15	4	28·6	—	611	94	18·4	82	6·2	24·6	42	2·4	1	7·2	7·2	—	11·2	7·4	8·0	11·2	
	1865	18	1	5·5	1	5·5	84	18·7	35	5·7	19·4	66	1	1·5	1	1·1	1·1	—	7·8	7·8	—	
	1866	20	4	20·0	8·3	16·6	632	24·2	43	11·8	8·9	36·0	54	5	9·3	9·3	—	—	—	—	8·5	—
	1867	24	2	—	8·3	2	8·3	14·5	21	8·3	17·8	51	4	7·8	7·8	—	—	—	—	8·5	—	
	1868	16	—	—	6·2	6·2	683	74	10·8	32	4·7	16·5	59	5	8·5	8·5	—	—	—	—	—	—
	1869	14	2	14·3	4	28·6	42·9	654	110	16·8	72	11·0	27·8	54	5	9·3	9·3	—	—	9·3	9·3	
	1870	12	5	41·7	—	41·7	8·0	885	76	11·0	87	5·4	16·4	73	6	8·3	8·3	—	—	11·1	11·1	
	1871	46	2	43·8	7	8·7	7·5	885	166	6·6	7·5	26·8	82	3	8·7	8·7	—	—	12·2	12·2		
	1872	33	15	45·4	1	8·0	48·4	1,065	128	12·0	7·5	26·8	97	29·9	1·8	12·4	12·4	—	—	48·3	48·3	
	1873	45	7	15·6	2	4·4	20·0	1,032	164	15·9	70	6·8	22·7	78	12	16·4	16·4	—	—	16·4	16·4	
District No. 7	1864	42	17·8	15	6·2	28·5	7,183	1,077	16·1	488	6·8	21·9	650	72	11·1	11·1	—	—	14·0	14·0		
	1865	43	11	25·6	7	16·8	41·9	115	20	17·4	5	4·3	21·7	9	—	—	1	11·1	11·1	—		
	1866	68	11	16·2	10	14·7	80·9	188	23	16·7	12	8·7	25·4	14	1	7·1	7·1	—	—	18·3	18·3	
	1867	78	12	16·4	5	6·4	6·6	21·8	180	24	18·3	9	10	6·5	9	—	—	—	—	6·6	6·6	
	1868	53	6	11·3	3	5·7	17·0	174	23	18·3	11	6·3	19·6	15	1	7·1	7·1	—	—	7·1	7·1	
	1869	68	10	14·7	5	7·8	22·0	168	22	18·9	11	7·0	20·9	14	1	7·1	7·1	—	—	—	—	
	1870	45	9	20·0	2	4·4	24·4	185	22	11·9	9	4·9	16·8	12	1	8·3	8·3	—	—	8·3	8·3	
	1871	88	5	13·2	2	5·3	18·5	160	16	10·7	6	4·0	14·7	9	1	11·1	11·1	—	—	11·1	11·1	
	1872	46	7	16·2	3	6·5	21·7	88	17	28·3	2	2·7	26·0	6	1	20·0	20·0	—	—	20·0	20·0	
	1873	38	8	16·4	9	84·6	50·0	120	14	11·7	28	8·5	28·3	18	8	23·1	23·1	—	—	46·2	46·2	
District No. 8	1864	78	16·5	60	9·9	25·4	1,488	200	18·9	98	6·8	20·7	116	11	9·5	4	8·4	—	—	12·9	12·9	

INFANTILE

TABLE No. 3.—*Death-rate from Inflammatory, Zymotic, Phthisis, and Neurotic Diseases.*

	No. Born	TOWN DISTRICTS												Total No. Born	Ave- age		
		1864	1865	1866	1867	1868	Total	Aver- age	1869	1870	1871	1872	1873				
INFLAMMATORY.																	
1 Year	Factory.	2,221	12	17	13	13	68	3·1	2,737	19	23	21	35	28	126	4·7	
	Artisan.	22,780	167	182	154	124	843	3·3	28,206	162	179	183	332	180	1036	3·5	
	Gentry.	551	—	—	2	3	2	1·2	772	2	7	4	33	6	53	6·7	
2½ Years	Factory.	2,221	7	6	7	6	38	1·7	2,737	10	6	7	12	6	41	1·5	
	Artisan.	22,780	95	86	79	100	470	2·1	28,206	92	81	109	129	107	518	1·6	
	Gentry.	551	—	2	—	—	2	0·4	772	—	1	—	11	—	12	1·7	
ZYMOTIC.																	
1 Year	Factory.	2,221	8	17	20	4	62	2·8	2,737	22	21	21	27	28	119	4·3	
	Artisan.	22,780	158	134	150	86	650	2·9	28,206	192	133	160	187	103	775	2·7	
	Gentry.	551	2	—	1	—	3	0·5	772	—	2	1	22	1	26	3·9	
2½ Years	Factory.	2,221	9	13	11	2	49	2·2	2,737	26	15	9	6	9	65	2·1	
	Artisan.	22,780	115	120	139	50	604	2·6	28,206	305	142	108	93	117	765	2·7	
	Gentry.	551	4	—	1	1	7	1·2	772	1	2	—	2	—	5	1·8	
PHTHISIS.																	
1 Year	Factory.	2,221	6	23	21	18	32	100	4·5	2,737	30	58	50	60	54	252	7·1
	Artisan.	22,780	225	272	287	283	245	1312	5·8	28,206	338	366	444	447	438	2033	7·2
	Gentry.	551	1	2	3	3	1	10	1·8	772	8	9	—	24	6	42	5·4
2½ Years	Factory.	2,221	2	4	8	16	12	42	1·9	2,737	14	15	17	7	17	70	2·6
	Artisan.	22,780	77	104	108	95	113	497	2·2	28,206	114	121	168	148	136	687	2·1
	Gentry.	551	—	—	—	—	—	—	772	—	2	—	10	—	12	1·5	
NEUROTIC.																	
1 Year	Factory.	2,221	10	18	19	21	24	92	4·1	2,737	29	29	21	14	30	123	4·5
	Artisan.	22,780	142	150	186	170	194	842	3·7	28,206	204	205	206	107	201	923	3·4
	Gentry.	551	2	3	2	2	4	13	2·4	772	4	3	1	12	5	25	3·3
2½ Years	Factory.	2,221	2	2	5	9	3	21	0·9	2,737	2	9	7	1	9	28	1·4
	Artisan.	22,780	89	43	45	50	54	231	1·0	28,206	58	67	73	41	59	298	1·1
	Gentry.	551	—	—	—	2	—	2	1·2	772	—	—	1	3	—	4	0·5

MORTALITY.

and Diseases of Respiratory Organs, Neurotic Affections.

No. Born	COUNTRY DISTRICTS												Town Districts			Country Districts			
	1864	1865	1866	1867	1868	Total	Aver- age	No. Born	1869	1870	1871	1872	1873	Total	Aver- age	1st 5 years	2nd 5 years	1st 5 years	2nd 5 years
527	5	6	6	3	5	25	4·7	486	2	4	5	1	2	14	2·9	3·1	4·6	4·7	2·9
1,978	9	10	16	12	17	64	3·2	1,804	10	7	8	17	10	52	2·9	3·3	3·7	3·2	2·9
107	—	1	1	—	1	3	2·1	68	—	1	—	1	—	2	2·9	1·2	6·7	2·1	2·9
527	4	7	2	2	—	15	2·8	486	1	2	1	3	1	8	1·6	1·7	1·5	2·8	1·6
1,978	4	10	5	7	5	31	1·6	1,804	9	4	2	24	2	41	2·3	2·1	1·8	1·6	2·3
107	—	—	—	—	—	—	—	68	—	—	—	2	—	2	2·9	0·4	1·5	—	2·9
527	6	2	6	—	—	14	2·6	486	3	3	5	—	1	12	2·5	2·8	4·3	2·6	2·5
1,978	10	6	6	2	4	28	1·4	1,804	6	3	4	3	3	19	1·1	2·9	2·7	1·4	1·1
107	—	—	—	—	—	—	—	68	—	—	—	—	—	—	—	0·5	3·4	—	—
527	1	3	4	1	—	9	1·7	486	1	4	1	3	2	11	2·3	2·2	2·4	1·7	2·3
1,978	5	4	13	2	8	27	1·4	1,804	3	7	5	9	2	26	1·4	2·6	2·7	1·4	1·4
107	—	—	—	—	—	—	—	68	—	—	—	—	—	—	—	1·2	0·6	—	—
527	2	4	4	3	8	21	4·0	486	10	5	7	10	7	39	8·0	4·5	9·2	4·0	8·0
1,978	4	14	18	16	23	75	3·8	1,804	23	25	23	27	26	124	6·9	5·8	7·2	3·8	6·9
107	—	—	2	—	—	2	1·9	68	1	1	—	4	—	6	8·8	1·8	5·4	1·9	8·8
527	3	2	1	2	2	10	1·9	486	2	—	4	4	3	13	2·7	1·9	2·6	1·9	2·7
1,978	2	3	5	6	11	27	1·4	1,804	9	8	1	15	3	31	1·7	2·2	2·4	1·4	1·7
107	—	—	—	—	—	—	—	68	—	—	—	1	—	1	1·5	—	1·5	—	1·5
527	5	8	8	6	7	34	6·4	486	3	4	5	—	4	16	3·3	4·1	4·5	6·4	3·3
1,978	14	19	13	18	12	76	3·8	1,804	11	10	6	10	13	50	2·8	3·7	3·2	3·8	2·8
107	—	—	—	2	—	2	1·9	68	—	1	—	—	—	1	1·5	2·4	3·2	1·9	1·5
527	3	1	—	—	5	9	1·7	486	1	1	1	—	1	4	0·8	0·9	1·0	1·7	0·8
1,978	2	2	4	2	2	12	0·6	1,804	4	2	2	—	2	10	0·5	1·0	1·1	0·6	0·5
107	—	2	—	—	—	2	1·9	68	1	—	—	—	—	1	1·5	1·2	0·5	1·9	1·5

THE DOCTOR
SOCIETY FOR
MEDICAL
OBSERVATION

THE OPHTHALMOSCOPE CONSIDERED AS AN AID TO
MEDICAL DIAGNOSIS.*

By ARTHUR H. BENSON, M.B., Assistant-Surgeon, St. Mark's Ophthalmic Hospital; Lecturer on Ophthalmic and Aural Surgery at the Ledwich School of Medicine.

THE value of the ophthalmoscope, to quote from Dr. Gowers, depends upon the fact that with it we can have under observation (1) the termination of an artery and the commencement of a vein, and the blood circulating within them. (2) The termination of a nerve, which, from its close proximity to the brain, and from other circumstances, possesses significant relations to the rest of the nervous system. (3) A nervous structure—the retina—which suffers in a peculiar way in many general diseases. (4) A vascular structure—the choroid—which also presents changes in certain constitutional affections. Nowhere else in the body are the commencement of a vein and the termination of an artery presented to view, and information regarding the general state of the vascular system may often be obtained by an inspection of their size and texture, and the conditions of the circulation within them. It must be remembered, however, that the vessels there seen are of very small size—the largest being about 0·25 mm. in diameter, and the smallest not more than 0·036 mm.

The arteries in the normal eye are smaller than the veins in the proportion of about 2 to 3 or 3 to 4; and by observing changes in this ratio, whether due to diminution in size or to dilatation, much valuable information may be obtained by the physician.

The ocular termination of the optic nerve, where it expands and becomes continuous with the retina, is somewhat paler than the rest of the fundus, and being slightly prominent, has been termed the “papilla,” whilst others prefer the name “optic disc.” From near its centre the vessels make their entrance and exit, and as it is devoid of retinal elements, it is incapable of being excited by the stimulus of light.

That the disc is blind, can be easily demonstrated by taking a card and marking on it two black spots a couple of inches apart, and closing the left eye, suppose, look with the right eye at the spot most to the left, for the optic nerve enters the eye to the inner side of the posterior pole. To throw the image, therefore, of an object upon the disc, it must be held to the outer side of the eye on which it is to fall. If, then, the card be approached to within eight or nine inches of the eye, so that a line

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joining the spots should subtend an angle, at the nodal point of the eye, of about 15° , the attention being fixed all the while on the left hand spot, it will be found that at a certain point, according to the distance of the spots from each other, the right hand one will disappear, and the card seem to have but one black spot. If, then, the card be brought nearer, or held further away from the eye, or turned sideways, so as to throw the image of the spot on any part of the fundus except the disc, the second spot at once reappears. It is important, from a medical point of view, to remember that the disc is blind, as it often serves to explain why opacities, &c., over its surface seem to cause such slight derangement of vision.

We are not aware that there is a blind spot in our eyes, because the field of vision becomes filled in with the help of the other eye in binocular vision, and even in single vision we are so accustomed to the absence of impressions in a certain place that it does not attract our attention. We are not conscious of any black patch, because to see darkness we require to have perceptive visual elements. We are no more capable of perceiving darkness with the optic disc than we are of perceiving it with the hand or the tongue. The nerves in neither case are capable of being stimulated by luminous vibrations, and are, therefore, incapable of appreciating their absence.

It is obvious that, before alterations in the appearance of the various structures of the eye can be appreciated, the observer must be familiar with the normal look of every part, and the degree of variation to which each is subject without exceeding the physiological limits. The size of the blood-vessels may vary considerably, and their distribution also, without exciting a suspicion of disease. The disc may vary in complexion nearly as much as the cheek; and the tint of the fundus, due to the degree of pigmentation of the choroid, may vary almost to the same extent as the hair or the irides.

As the vascular supply of the retina is in immediate connexion with that of the cerebrum and meninges, much may be learned regarding the conditions of the latter by observing the changes in the former, remembering, at the same time, to make allowance for the influence exerted by the peculiar conditions of the intra-ocular circulation, rigidly enclosed as it is in a small chamber, where it is always subject to a certain amount of elastic pressure.

Pulsation in the retinal arteries is often visible, and where not due to high tension of the globe, is most frequent when the strength and suddenness of the pulse-wave is increased. Pulsation in the veins is sometimes physiological. Haemorrhages may occur from ruptured retinal vessels. Any cause which deranges the balance between pressure and counter-pressure, either increased intra-vascular pressure, as from cardiac hypertrophy, or decreased strength of the vascular walls, the result of

senile change, or degeneration of the vessels due to general blood disease, may lead to haemorrhages, as seen in cases of renal disease and diabetes, gout, pernicious anaemia, leucocytæmia, purpura, ague, scurvy, pyæmia, over-lactation, &c., and from the condition of the eye may often be surmised the condition of the neighbouring cerebrum. In the eye, too, may be noticed the effects of thrombosis and embolism, with their remarkable and interesting train of symptoms and physical signs; and here, also, may be observed spasmotic arteriole contraction, producing temporary amaurosis—a condition the fuller investigation of which, by the physician, may throw much light on the pathology of epilepsy. But of all the changes in the fundus oculi, those occurring in the optic nerve, as seen at its entrance into the eye, are the most important to the physician. They may be broadly divided into inflammatory and atrophic changes.

Inflammation of the ocular termination of the optic nerve, neuritis, or papillitis, as it is sometimes and more accurately termed, may be the first and, perhaps, only sign of intra-cranial mischief, such as tumour, meningitis, &c. It is important, therefore, to be able to differentiate those cases which are purely ocular from those which are due to irritation or pressure exerting an influence from a distance. Sometimes the manner and rapidity with which loss of sight comes on, or more important still, the portion of the field affected, yield important information regarding the primary seat of the disease. According to Gowers, a symmetrical hemiopic defect in the field of vision indicates an intra-cranial cause; an unsymmetrical lateral defect, especially a loss of the temporal halves, commonly means pressure on the chiasma; complete loss of sight of one eye, and loss of the adjacent half of the other field, probably points to a cerebral origin; a peripheral restriction of the fields usually means damage in front of the optic commissure; a central scotoma is only observed when there is considerable lesion at the macula. The most frequent cause of optic neuritis is encephalic disease. Gowers considers that in cerebral tumour evidence of "descending neuritis" may be traced much more commonly than current statements suggest; while in cases of meningitis the evidence of "descending neuritis" is invariable, and Galezowski's tables show that very nearly 50 per cent. of the cases of atrophy of the disc are associated with disease of the brain and spinal cord. The diagnostic value, therefore, of neuritis or atrophy of the disc, whether primary or consecutive to the neuritis, as an indication of the existence of intra-cranial disease, is considerable. Not unfrequently the occurrence of optic neuritis, in the course of cerebral disease, indicates an advance in the morbid process, and must, therefore, be regarded as an unfavourable sign.

In locomotor ataxy, simple parenchymatous atrophy of the optic nerve occurs in somewhat over 15 per cent. of the cases. The colour of the disc is a greenish or bluish gray, while the retinal vessels retain their

normal size. This form of atrophy is seldom, if ever, preceded by neuritis, but the trunk of the nerve, though remaining almost unchanged in bulk, becomes gray and semi-translucent. M. Charcot believes that almost all cases of so-called simple atrophy ultimately develop spinal symptoms. It often happens that for years the only symptom of ataxy present will be the optic atrophy, so that in any case of simple atrophy of the disc where there is absence of the "tendon reflex," you must be very guarded in your prognosis, for most likely sooner or later—though in some cases the interval is many years—symptoms of ataxy will be developed.

In a large number of cases of renal disease, changes in the retina, of a very marked and characteristic kind, take place. They form, perhaps, the class of ocular changes which most frequently come under the notice of the physician. These changes are met with only in the chronic forms of kidney disease, by far the most frequent being the granular kidney, the lardaceous being that in which retinal degeneration is least marked.

Dr. Gowers has drawn special attention to the notable diminution in size of the retinal vessels independently of the existence of any special retinal disease. This also is most marked in the contracted form of kidney disease. The diminution he ascribes to the same causes which produce "arteriole contraction" elsewhere through the body, and considers that it "constitutes evidence of some weight in support of the view of Dr. George Johnson, that such contraction exists and causes the hypertrophy of the muscular coat of the artery." The high arterial tension, hard pulse, and subsequent hypertrophy of the heart may be thus accounted for. But the changes in the fundus, which have become specially identified with renal disease, are situated in the optic nerve and the retina itself, and the term "albuminuric retinitis" is the one invariably used to describe them. The names "degenerative," "haemorrhagic," "inflammatory," "neurotic," &c., have been used to designate the different forms of the disease met with, according as the most obvious change in the fundus consisted of patches of retinal degeneration, or extravasated blood, general inflammation, or inflammation of the nerve. The first of these—the degenerative—is the most common, but haemorrhages, neuritis, &c., in some degree almost invariably accompany all forms. The patches of degeneration in the retina are peculiar in size, shape, and distribution. They are arranged usually in lumpy, whitish masses round the disc, and have been likened to "wool-pack clouds." Other smaller and more brilliant spots, due to fatty degeneration of the nerve fibres of the retina, are commonly arranged more or less concentrically round the yellow spot, at times completely encircling it, or being disposed in radiating or fan-shaped accumulations. The haemorrhages are often numerous and large, and may assume the most irregular shapes, though most usually they are small and flame-shaped, with ill-defined

edges. Although the changes in the fundus are so marked and extensive, yet it is worthy of note that complete loss of sight is an event of great rarity in albuminuric retinitis, whereas in retinitis of an apparently similar degree, due to other causes—*intra-cranial* disease, for instance—it is the rule. This fact may often serve to differentiate the atrophy consequent upon this form of disease from others with which it might be confounded.

It is an exceedingly common thing for the ophthalmic surgeon to be the first to discover the existence of renal disease. The patient may have been feeling seedy and out of sorts for a long time without knowing very well what was the matter. The physician, if such were consulted, having nothing to direct his attention to the kidneys as the cause of the trouble, may not have examined the urine, and it is, perhaps, not until an oculist is consulted about the failing eyesight that the true cause of the malady is discovered. Such an experience is so common with ophthalmic surgeons that one instance out of many may suffice.

M. B., aged twenty-six, mother of eight children, came to St. Mark's Ophthalmic Hospital the other day, complaining that her sight had been going for some months. Her health seemed failing, her complexion was pale and tallowy, and she suffered from headache very constantly. On examining the eyes with the ophthalmoscope, the typical appearances of retinitis albuminurica were discovered, and on testing the urine it was found loaded with albumen. The heart was then examined, and a murmur discovered, and the typical hard pulse felt. The woman is now in hospital, but had she not sought advice about her eyes, she might have remained for an indefinite time with her case undiagnosed. Had her medical attendant been in the habit of using his ophthalmoscope more regularly, he might have long ago discovered the true nature of her malady.

In many cases also disease of the heart may be recognised by means of the ophthalmoscope, and it not unfrequently happens that here, too, the oculist may usurp the place of the physician.

A case in point occurred a few days since in the out-patient department of St. Mark's Ophthalmic Hospital. My colleague, Mr. Story, was on duty when a man came in complaining of some defect of sight. On examining his fundus with the ophthalmoscope, Mr. Story found conditions which at once suggested cardiac disease. An examination of the heart was made by the Resident Surgeon, Dr. Beatty, and a double murmur discovered.^a

The vessels of the retina participate, in a modified degree, in alterations occurring in the systemic circulation. The modifying influences

^a Since writing the above I have, by means of the ophthalmoscope, on two occasions, been led to the discovery of valvular disease of the heart in patients in whom any cardiac affection had not been previously suspected.—A. H. B.

are mainly due to the small size of the retinal vessels, and the conditions of the intra-ocular tension. Pulsation in the veins may be frequently noticed in aortic regurgitation, and even in the arteries it is by no means rare. Retinal haemorrhages are rare in simple heart disease, though they are sometimes found in hypertrophy; but in "malignant endocarditis" they are exceedingly common, and greatly aid the diagnosis. In many cases the ophthalmoscope enables us to detect inherited syphilis, when the history is suppressed, or the signs and symptoms are equivocal. The disseminated chorioiditis of hereditary specific disease is almost as pathognomonic a sign as the notched teeth, but, like them, its absence proves nothing.

Last week a girl, aged twelve years, came to the out-patient room at St. Mark's Hospital. On examination I found the typical chorioiditis, but the teeth were not notched, nor the palate highly arched; still a diagnosis of syphilis could be made. I told her to bring her mother next day, and from her obtained a satisfactory history confirming my diagnosis.

Anomalies of refraction, whether myopia, hypermetropia, or astigmatism, may, and often do, simulate cerebral disease in such a way as to make the differential diagnosis exceedingly difficult, unless aided by the ophthalmoscope. It frequently happens that patients, otherwise apparently healthy, remain for years subject to almost constant headaches, accompanied, at times, by giddiness and vomiting, which render life a burden. Their medical attendant may advise rest, sea voyages, &c., and yet no permanent relief be obtained. Cerebral mischief is most likely to be the diagnosis. Yet what, in reality, may be the cause? Some anomaly of refraction which has not been corrected, and which the ophthalmoscope at once discovers. Correct this with suitable glasses, and your patient is at once and permanently relieved, after years, perhaps, of anxiety and suffering.

I remember seeing a boy at Moorfields Hospital, in London, who suffered from almost constant headaches, with occasional attacks of giddiness, aggravated whenever he attempted to study. On ophthalmoscopic examination astigmatism was discovered, the correction of which totally and permanently cured him of all the symptoms. Had the ophthalmoscope not been used, he might have still been wasting his substance on nervine tonics, or dragging out a miserable and useless life.

Time permits me but very briefly to indicate a few out of the numerous instances in which the ophthalmoscope may greatly aid the physician in arriving at a certain diagnosis in obscure cases. Yet I trust I have said enough to show that this little instrument has a great future of usefulness before it. I feel confident that in a very few years' time it will form part of every practitioner's armamentarium; and be assured it will stand his trusty friend in many a difficulty to which the stethoscope and thermometer can offer no solution.

THE DUBLIN
SOCIETY FOR
MEDICAL
OBSERVATION

SANITARY AND METEOROLOGICAL NOTES.

Compiled by J. W. MOORE, M.D., F.K.Q.C.P.

VITAL STATISTICS

Of Eight Large Towns in Ireland, for Four Weeks ending Saturday November 6, 1880.

Towns	Population in 1871	Births Registered	Deaths Registered	DEATHS FROM ZYMOtic DISEASES								Annual Ra of Mortality per 1,000 Inhabitans
				Smallpox	Measles	Scarlet Fever	Diphtheria	Whooping Cough	Fever	Diarrhoea		
Dublin,	-	314,666	661	813	5	9	51	4	24	28	36	32
Belfast,	-	182,082	463	367	—	2	—	3	16	15	20	22
Cork,	-	91,965	166	204	—	—	9	2	4	17	12	28.8
Limerick,	-	44,209	68	87	—	2	12	1	—	—	5	25.6
Derry,	-	30,884	65	46	—	—	—	2	5	3	1	19.4
Waterford,	-	30,626	59	125	—	11	15	—	—	1	25	53.1
Galway,	-	19,692	16	26	—	—	—	—	—	3	—	17.1
Sligo,	-	17,285	26	21	—	—	—	—	—	2	3	15.1

Remarks.

The mortality was excessive in Waterford, where serious epidemic diarrhoea, scarlatina, and measles prevail. It was also, as usual, high in Dublin. In Cork, Belfast, and Limerick it was high. In other towns it was moderate or low. The deaths registered represent death-rates per 1,000 of the population annually of—28.8 in the six principal town districts of Ireland, 22.3 in large English towns (including London), 21.2 in London, 22.5 in Edinburgh, 22.7 in Glasgow, 32.2 in the Dublin registration district, when the deaths of persons admitted to public institutions from localities outside the district are excluded, 36.2 within the municipal boundary of Dublin, when a similar correction is made. Zymotic affections were credited with 184 deaths in Dublin compared with a ten-years' average of 138.5. Scarlatina, diarrhoeal fever, and whooping-cough were the most fatal amongst this class of diseases. Twenty-eight deaths due to fever were classified thus—typhus 10, enteric 14, "simple continued fever" 4. Whooping-cough, fe

id scarlatina seem to be widely prevalent in many of the towns. In Dublin diseases of the organs of respiration caused 179 deaths, the average for the period being 91·5. These deaths included 142 from bronchitis (average = 66·8) and 27 from pneumonia (average = 14·1). At the close of the four weeks—that is, on Saturday, November 6—the number of cases of epidemic diseases under treatment in the principal Dublin hospitals were as follow—Smallpox, 5; measles, 14; scarlet fever, 38; typhus, 70; enteric fever, 59; pneumonia, 13.

METEOROLOGY.

Abstract of Observations made at Dublin, Lat. 53° 20' N., Long. 6° 15' W., for the Month of October, 1880.

Mean Height of Barometer,	-	-	-	29·985 inches.
Maximal Height of Barometer (on 14th at 9 a.m.),	-	30·444	"	
Minimal Height of Barometer (on 28th at 7 30 a.m.),	-	29·003	"	
Mean Dry-bulb Temperature,	-	-	-	44·9°
Mean Wet-bulb Temperature,	-	-	-	42·9°
Mean Dew-point Temperature,	-	-	-	40·5°
Mean Elastic Force (Tension) of Aqueous Vapour,	-	·252	inch.	
Mean Humidity,	-	-	-	84·9 per cent.
Highest Temperature in Shade (on 1st),	-	-	-	61·8°
Lowest Temperature in Shade (on 20th),	-	-	-	28·2°
Lowest Temperature on Grass (Radiation) (on 22nd),	-	24·9°		
Mean Amount of Cloud,	-	-	-	60·8 per cent.
Rainfall (on 15 days),	-	-	-	7·358 inches.
General Directions of Wind,	-	-	-	E.N.E. & W.N.W.

Remarks.

A month signalised by an almost persistent low mean temperature, and rendered still more remarkable by two cyclones—one prevailing from the 4th to the 8th, the other from the 26th to the 28th—in which no less than seven inches of rain fell in Dublin. The first day of the month was mild, the thermometer rising to 61·8° in the shade, and being as high as 57·0° even at 9 p.m. Twenty-four hours later it was 16° lower. On the 4th a deep depression advanced from the Bay of Biscay towards the S.W. of England, in which locality it "hung" for several days, bringing most unsettled weather with easterly gales and heavy falls of rain and hail on the east coast of Ireland in particular. In Dublin lightning was seen on the evening of the 4th, and 2·406 inches of rain with hail fell on the 4th and 5th. The N. and N.W. of Ireland entirely escaped this rainstorm. From the 10th to the 18th conditions were cyclonic, and tranquil autumnal weather was generally experienced, but the 19th, however, winter set in with severity, and the weather aft

wards remained cold and inclement to the end of the month. On the night of the 19th the sheltered thermometer fell to 28.2° in Dublin. Next day showers of hail and snow fell along the coast south of the city. On the morning of the 21st the thermometer was as low as 23° at Parsonstown. Remarkable differences of temperature were at this time observed in Western Europe, and they apparently prepared the way for the development of a memorable cyclone, which slowly crossed England north-eastwards in the period between the 26th and the 29th. At 8 a.m. of the 22nd the thermometer was 38° in Paris and 68° at Biarritz. At the latter station it rose to 79° in the course of the day. By the morning of the 26th a serious disturbance had advanced to the neighbourhood of St. George's Channel and of the English Channel, where it became stationary, meanwhile throwing off subsidiary depressions, which travelled up the English Channel or across the South of England. Gales of great violence prevailed, blowing from E. to N.E. in the North of England and over Ireland, but from S. to W. in the Channel and over France, where temperature remained high. In the region of the easterly winds excessive rainfalls occurred. Thus, in Dublin between 11 a.m. of the 26th and 9 a.m. of the 28th (46 hours) 8.518 inches of rain fell. The last three days of the month were fine but cold. The N. and N.W. of Ireland again almost entirely escaped the severity of this storm. In Dublin hail fell on the 4th, 20th, 22nd, 23rd, 27th, and 28th. Sleetly rain fell on the 4th and 27th. Lightning was seen on the 4th. The rainfall on the 27th (2.736 inches) was the heaviest recorded since the present series of observations commenced in 1865. At the Ordnance Survey Office, Phoenix Park, 3.030 inches of rain fell on the 27th, being the greatest amount registered in twenty-four hours since the establishment of the Observatory in 1837. The atmosphere was more or less foggy on the 12th, 14th, 15th, and 26th.

IODOFORM IN PRURITUS VULVÆ.

AT a recent meeting of the New York Obstetrical Society, Dr. Mackenzie remarked that the plan of treatment which, in his hands, had yielded the best results was a local application of an ethereal solution of iodoform in the form of a spray. It produced no pain, and was very rapid in its action. Dr. Warren also had used iodoform in an ointment in these cases, and with more satisfactory results than from anything else he had tried.—*N. Y. Med. Journal*, October.

PERISCOPE.

Edited by G. F. DUFFEY, M.D., F.K.Q.C.P.

INSANITY FROM LEAD-POISONING.

IN a communication to the *Journal of Mental Science*, July 1880, Dr. Rayner gives some statistics which tend to show that painters, plumbers, and glaziers, furnish more than their proportionate quota to the insanity of this country. There seems to be no reason to believe that there is an excess of intemperance or of hereditary taint among men of this class, but rather the contrary; this affords a fair presumption that the excess of insanity is due to exposure to lead. Six cases are related by Dr. Rayner; and he infers from them, and from the records of Tanquerel and others, that there are three chief modes in which lead-poisoning may produce insanity, viz.:—1. Coarse lead-poisoning, producing attacks of acute mania and conditions closely resembling general paralysis, such as Tanquerel describes under the term lead-encephalopathy; 2. Cases of minute and protracted lead-intoxication, producing slowly developing sensory hallucinations, noticeable by the absence of the feeling of persecution, and by the persistence of the hallucinations of sight; 3. Cases in which somewhat coarse toxæmia in the first instance develops gout, and then, acting in conjunction with the gouty poison, produces a form of mental disorder closely resembling general paralysis. Dr. Robertson gives six cases which he has met with during the last five years; they all occurred in women, and were due to working in a white-lead manufactory. He considers that none of his cases could have been mistaken for general paralysis by any one at all familiar with that disease. Dr. Savage relates one case, and mentions several others; he recognises a similarity in the symptoms of insanity from lead-poisoning to those occurring from drink and those seen early in general paralysis. Dr. Ringrose Atkins also describes one case; he and the other authors of this paper draw attention to the premature senility seen in patients who are insane from lead-poisoning; also to the severe disturbances of nutrition caused by the poison, which apparently has a special effect upon the nervous system.—*Lon. Med. Record*, October 15, 1880.

PUERPERAL PANOPHTHALMITIS.

HOSCH (*Arch. f. Ophth.*, XXVI., 1) gives a case of panophthalmitis in the puerperal woman, with a full microscopical examination. Puerperal fever set in on the sixth day after delivery, and two days afterward the first symptoms appeared in the left eyelids. Two days later vision was entirely lost in this eye, and the right eye became affected. Both eyes showed irido-chorioiditis with extensive pupillary and deep exudations, and the left eye protruded from the orbit. Death occurred on the tenth

day after the beginning of the fever. Hosch was not able to tell from the microscopic examination whether the disease had begun in the choroid or in the retina. In the vitreous of each eye there were numerous lepto-thrix fibres, showing the abundant development of a fungoid growth. He also found great numbers of what he considered to be micrococci in some of the retinal vessels, which corresponded exactly with the fungus thrombi found in septic processes by many observers. These same bodies existed in great numbers in the uriniferous tubules of the kidneys. Hosch agrees with Leber in differentiating the disturbance in the circulation caused by the embolism from that due to the specific irritation of the plugs. The rapid development of pus throughout the entire retina, the uveal tract, the vitreous, the cornea, and even the lens, he regards as due to the diapedesis of the white blood-corpuscles under the influence of infectious substances in the blood current, which act upon the vascular walls. These irritating substances are the bacteria. Hosch does not help us, however, in clearing up the obscurity which still hangs round the mode of action of these fungoid structures in destroying animal tissues.—*N. Y. Med. Journal*, October.

NEW PREPARATIONS AND SCIENTIFIC INVENTIONS.

Lawton's Absorbent Cotton.

We have received from Messrs. S. M. Burroughs & Co., a package of Lawton's absorbent cotton. This substance differs little from ordinary cotton in appearance, except in its uniformly fine quality and pure white colour; but it has the property of instantly absorbing liquids, so that if a small wad of it be dropped into a vessel of water, it becomes at once soaked through, and sinks to the bottom. By reason of this quality, and owing to its exquisite softness, the absorbent cotton is invaluable as a direct application to discharging surfaces. It may be put on dry, to soak up effused liquids; or it may be used as a vehicle for topical medications; or it may be employed to give body to a water dressing. A pledge of it, of any required size, answers admirably the purpose of a sponge, and may be at once destroyed after use.

Not only in general surgery, but also especially in gynaecological practice, the absorbent cotton has found great favour. For cleansing or making applications to the os uteri or vagina, for absorbing lochial and other discharges, and for other purposes which will readily suggest themselves, this article is said to answer extremely well. By soaking the absorbent cotton in medicated solutions, and subsequently drying it, we may obtain the effects of many local remedies. Thus we may, by using carbolic, boracic, or salicylic acid, or Labarraque's solution, make it antiseptic. By saturating it with astringents we may obtain even a most powerful styptic. Messrs. Fannin and Co., 41, Grafton-street, are the agents in Dublin for this commodity.

THE LONDON
SOCIETY FOR
MEDICAL
PRESERVATION

I N D E X
TO THE SEVENTIETH VOLUME.

Abdominal section in pelvic suppuration, 237.
Abraham, Mr. P. S., fracture of os calcis, 527.
Allan, Dr. J. W., notes on fever-nursing, *Rev.*, 45.
Amyl nitrite in asphyxia neonatorum, 368.
Analgesia produced by rapid breathing, 365.
Anatomical and Surgical Society, annals of the, *Rev.*, 130, 574.
Anderson, Dr. R. J., on apnoea and heat dyspnoea, 209—respiratory excitation and depression, 269.
Aneurism, cases of, 169, 170—thoracic, a new physical sign in, 464.
Annales de dermatologie et de syphiligraphie, *Rev.*, 226.
Annals of the Anatomical and Surgical Society of Brooklyn, *Rev.*, 130, 574.
Antiseptic excision of knee-joint, by Mr. Coppering, 1.
Antiseptic treatment of enteric fever, 363.
Antiseptics in childbed, 438.
Aphonia spastica, 347.
Apnoea, Dr. R. J. Anderson on, 209.
Articular dropsey, intermittent, 529.
Ashby, Dr. Henry, notes on physiology, *Rev.*, 126.
Atkins, Dr. Gelston, obstetric report of the Cork maternity, 297.
Athill, Dr. Lombe, diseases peculiar to women, *Rev.*, 330.

Baldon, Mr. H. B., the spirit of nature, 422.
Baker, Dr. Benson, how to feed an infant, *Rev.*, 185.
Ball, Dr. C. B., fracture of os calcis, 525.
Barton, Dr. J. K., silent caries of foot, 267.
Barton, Dr. Travers B., on abscess of the liver, 302.

Bäumler, Dr. Christian, on mild enteric fever, 384.
Beard, Dr. George M., on sea sickness, *Rev.*, 228.
Belfast, the infantile mortality of, Dr. C. D. Purdon on, 530.
Bellamy, Mr. E., surgical anatomy, *Rev.*, 229.
Bennett, Professor E. H., on melanotic sarcoma of orbit, 66—wounds of the kidneys, 164—"greenstick" fracture of the bones of the arm, 258—disease of the knee-joint, 264—fracture of os calcis, 526.
Benson, Mr. A. H., the ophthalmoscope in medical diagnosis, 542.
Bentley, Mr. R., medicinal plants, *Rev.*, 227.
Benzoylate of soda in whooping-cough, 461.
Bernard, Dr. Walter, on the diagnosis of enteric fever, 469—discussion, 522—neurosal palpitation, 520.
Bile, presence of, in lymph and blood, 60.
Boddy, Mr. E. M., on hydropathy, *Rev.*, 134.
Boracic acid, 248.
Bright's disease, combinations of, 186.
Brown, Dr. J. Walton, on hernia, 71.
Burns, treatment of, 287.

Calcaneum, cases of fracture of, 525, 526, 527.
Calcutta, continued fever of, Dr. Dedrickson on, 481.
Calomel, general exanthema from, 188.
Carbolic acid poisoning, 515.
Carmichael prize essays, *Rev.*, 217.
Castor oil, 288.
Cataract operations, report on, by Mr. J. B. Story, 97.
Catarach, gastro-enteric, and enteric fever, Dr. Bäumler on, 384.
Cerebro-spinal meningitis, case of, 175.
Cerium oxalate for relief of cough, 283.
Cheiro-pomapholyx, Dr. W. G. Smith on, 390.

Child saved by *post mortem* section, 58.
 Childbed, antiseptics in, 438.
 Children, convulsions in, 285—nocturnal terrors in, 458.
 Chloral hydrate in gastro-enteritis, 362—conjunctivitis from, 464.
 Chlorate of potassium, Dr. Harkin on, 403.
 Climatic treatment of consumption, 367.
 Climatology, recent works on, *Rev.*, 409.
 Clinical records, 84, 175, 452.
 Cod-liver oil—and chloral, 83—and iodiform, 185.
 College of Physicians, transactions of the Medical Society of the, 516.
 Condylotomy in genu valgum, by Mr. Swan, 465.
 Conjunctivitis from chloral, 464.
 Convulsions in children, 285.
 Coppinger, Mr. C., on antiseptic excision of knee-joint, 1.
 Cork Maternity, Dr. Gelston Atkins' report of the, 297.
 Cork Medico-Chirurgical Society, transactions of the, 447.
 Cork-street Hospital report, by Dr. Harvey, 8—clinical record from, 175.
 Corley, Dr. A. H., on a case of hydrophobia, 445.
 Cornea, anaesthetic effect of cold on the, 312.
 Coroner's inquests, 50.
 Cough relieved by oxalate of cerium, 283.
 Cusso, 288.
 Cyanide of potassium, rapid action of, 55.
 Cystotomy for cystitis in the male, 181.

Dedrickson, Dr. R. T., on continued fever in Calcutta, 481.
 Dempsey, Dr. Alexander, on catarrhal pneumonic phthisis, 348.
 Diagnosis, the ophthalmoscope as an aid to, by Mr. A. H. Benson, 542.
 Diaphragm, fatty, a cause of instant death, 56.
 Dilatation of the uterus by mechanical means, 438.
 Donovan, Dr. Denis D., on rötheln, 447.
 Drapes, Dr. Thomas, on anomalous cases of fever, 474.
 Dropsy, intermittent articular, 529.
 Dublin, Pathological Society of, proceedings of the, 61, 157, 250, 334, 443, 523—report of the Royal Sanitary Commission, *Rev.*, 325.
 Duffey, Dr. G. F., on scirrhus of the pylorus, 68—periscope, 94, 185, 283, 362, 461, 551.
 Dysidrosis, Dr. W. G. Smith on, 390.
 Dyspnoea from heat, Dr. R. J. Anderson on, 209.

Eczema, Dr. Finny on local forms of, 289.
 Elliott, Mr. W. A., on spinal irritation, 369.
 Enteric fever, antiseptic treatment of, 368—Dr. Bäumler on mild, 384—Dr. Bernard on the diagnosis of, 469—discussion, 522.
 Epilepsy—and crime, 59—picrotoxin in, 364—thalamic, 366.
 Ergotine, topical use of, 91.
 Ethyl iodide, 287.
 Excision of knee-joint, antiseptic, by Mr. Coppinger, 1.
 Exophthalmic goitre, Dr. Foot's cases of, 452, 523.

Fenwick, Dr. Samuel, outlines of medical treatment, *Rev.*, 181.
 Fever, cases of, 161, 172, 175—typhus, Dr. Fitzmaurice on, 307—enteric, antiseptic treatment of, 368—Dr. Bäumler on mild enteric, 384—Dr. Bernard on the diagnosis of enteric, 469—Dr. Drapes on anomalous cases of, 474—Dr. Dedrickson on continued, as met with in Calcutta, 481.
 Fibromatosis, 462.
 Finny, Dr. J. M., on duro-arachnitis, 61—hydrophobia, 84, 446—tubercular fever, 167—aortic aneurism, 170—local forms of eczema, 289.
 Fitzmaurice, Dr. R., on typhus fever, 307.
 Fetus, sound heard after death of, 58.
 Foot, Dr. A. W., on myoma of prostate gland, 67—thoracic aneurism, 169—exophthalmic goitre, 452, 523.
 Fracture of os calcis, cases of, 525, 526, 527.
 Franks, Dr. Kendal, report on rhinology, &c., 186.

Gamgee, Dr. Arthur, text-book of physiological chemistry, *Rev.*, 498.
 Gastro-enteritis—of children, chloral hydrate in, 362—and enteric fever, Dr. Bäumler on, 384.
 Genu valgum treated by condylotomy with the chisel, by Mr. Swan, 465.
 Glycerine in flatulence, acidity, and pyrosis, 188.
 Godlee, Rickman J., atlas of human anatomy, *Rev.*, 333.
 Goitre, exophthalmic, Dr. Foot on, 452, 523.
 Gonorrhœa, treatment of, 283.
 Goodell, Dr. William, lessons in gynaecology, *Rev.*, 487.
 Gowers, Dr. W. R., diseases of the spinal cord, *Rev.*, 37.
 Graves' disease, Dr. Foot's cases of, 452.
 Gray, Mr. Henry, anatomy, *Rev.*, 513.

Guttmann's physical diagnosis, by Dr. A. Napier, *Rev.*, 421.
 Gynaecology, report on, 432.

Hæmophilia, cases of, by Dr. Winter, 202.
 Hæmorrhoids, ulcerating, treatment of, by constipation, 95.
 Hammock suspension in spinal curvature, 233.
 Hands, recurrent vesicular disease of the, by Dr. W. G. Smith, 390.
 Hardwicke, Dr. H. J., on medical education, *Rev.*, 221.
 Harkin, Dr. Alexander, on chlorate of potassium, 403.
 Harris, Dr. Vincent, manual for the physiological laboratory, *Rev.*, 126.
 Hart, Mr. Ernest, on vaccination, *Rev.*, 40.
 Harvey, Dr. R. J., medical report of Cork-street Hospital, 8.
 Headache, occipital, in uremia, 463.
 Heat dyspnoea, Dr. R. J. Anderson on, 209.
 Hernia, Dr. J. Walton Browne on, 71.
 Hilton's lectures on rest and pain, edited by Mr. Jacobson, *Rev.*, 323.
 Hot water in surgery, 190.
 Hydrobromic ether in labour, 187.
 Hydrophobia, Dr. Finny on a case of, 34, 446—Dr. Corley's case of, 445.
 Hydrosis, vascular, a prophylactic to poisonous absorption, by Dr. Leslie Maturin, 116.
 Hysterical element in orthopaedic surgery, 284.

Infantile mortality in Belfast, Dr. C. D. Purdon on, 530.
 Insanity from lead-poisoning, 551.
 Intermittent articular dropsy, 529.
 Intertrigo infantilis, 174.
 Intra-uterine education, 58.
 Iodide of ethyl, 287.
 Iodoform in pruritus vulvæ, 550.
 Iritis, salicylate of soda in, 364.
 Iron, dialysed, 241.
 Irritation, spinal, Mr. Elliott on, 369.

Jaborine, Drs. Harnach and Meyer on, 486.
 Jacob, Dr. A. H., on the General Medical Council, *Rev.*, 220.
 Jacobson, Mr. W. H. A., Hilton's lectures on rest and pain, *Rev.*, 323.
 Jones, Dr. H. M., stand for demonstrating mechanism of labour, 190.
 Journal of anatomy and physiology, *Rev.*, 417.

Kane, Dr. H. H., the hypodermic injection of morphia, *Rev.*, 221.
 Knee-joint, antiseptic excision of the, by Mr. Copperger, 1.
 Kraus, Dr. J., on Carlsbad, *Rev.*, 224.

Labour, mechanism of, Dr. Jones's stand for demonstrating, 190.
 Laffan, Dr. Thomas, Carmichael prize essay, *Rev.*, 218.
 Laryngology, report on, 152.
 Lawton's absorbent cotton, 552.
 Lead-poisoning, insanity from, 551.
 Lee, Dr. R. J., pathological anatomy, *Rev.*, 183.
 Legg, Dr. J. W., examination of the urine, *Rev.*, 43—bile, jaundice, and bilious diseases, *Rev.*, 120.
 Leucocytæmia, priapism in, 368.
 Little, Dr. T. E., abnormality of the great cardiac vessels, 443.
 Liver, Dr. Travers Barton on abscess of the, 302.
 Lombard, Dr. H. C., traité de climatologie, *Rev.*, 409.
 Lombard, Dr. J. S., regional temperature of head, *Rev.*, 46.
 Londonderry Infirmary, report of the, *Rev.*, 316.

Macan, Dr. A. V., report on midwifery and diseases of women, 432.
 Mac Cormac, Mr. W., on antiseptic surgery, *Rev.*, 29.
 MacEwen, Dr. Wm., on osteotomy, *Rev.*, 508.
 Mackenzie, Dr. Morell, diseases of the throat and nose, *Rev.*, 211.
 Macnamara, Dr. F. N., climate of Himalayan India, *Rev.*, 412.
 Materia medica, report on, 240.
 Maturin, Dr. Leslie, on vascular hydrosis as a prophylactic to poisonous absorption, 116.
 Medical—Society, Ulster, transactions of the, 71, 269, 348, 530—of the College of Physicians, transactions of the, 516—jurisprudence, report on, 50—profession, recent works on the, *Rev.*, 217—Act Amendment Bill, reports on the, *Rev.*, 220.
 Medico-Chirurgical Society of Cork, transactions of the, 447.
 Meningitis, cerebro-spinal, 175.
 Menstrual discharge in an infant, 57.
 Meteorological notes, 93, 184, 282, 361, 460, 549.
 Metritis, diagnosis of, 359.
 Midwifery, report on, 432.
 Miller, Sir William, report of Londonderry Infirmary, *Rev.*, 316.

Molesworth, Miss Caroline, the Cobham journals, *Rev.*, 317.

Moore, Dr. J. W., sanitary and meteorological notes, 92, 182, 281, 360, 459, 548—enteric fever with cerebral symptoms, 161—enteric fever with hyperpyrexia, 172—cerebro-spinal meningitis, 175.

Morahead, Mr. E. A., physiological action of drugs, *Rev.*, 184.

Mortality of infants in Belfast, Dr. C. D. Purdon on, 580.

Napier, Dr. A., Guttmann's physical diagnosis, *Rev.*, 421.

Nephrectomy, 234.

Neuralgia of the testis, 285.

Neurosal palpitation, Dr. Bernard on, 520.

New preparations, 552.

Nixon, Dr. C. J., on ascites and erysipelas peritonitis, 255—mitral regurgitation, 258—Cheyne-Stokes's respiration, 258—cholera Europaea, 337.

Nocturnal terrors in children, 468.

Obstetric report of the Cork Maternity, by Dr. Galston Atkins, 297.

Occipital headache in uremia, 468.

Ophthalmoscope in medical diagnosis, by Mr. A. H. Benson, 542.

Ormerod, Miss Eleanor A., editor of the Cobham journals, *Rev.*, 317.

Os calcis, cases of fracture of the, 525, 526, 527.

Ouler, Dr. William, Montreal General Hospital Reports, Vol. I., *Rev.*, 228.

Page, Dr. David, facts about fevers, *Rev.*, 331.

Palpitation, neurosal, Dr. Bernard on, 520.

Panophthalmitis, puerperal, 551.

Papaine, digestive action of, 189.

Patella, transverse fractures of, treated by tendinous suture, 408.

Pathological Society of Dublin, proceedings of the, 61, 157, 250, 334, 448, 528.

Pericarditis, Dr. W. G. Smith's case of, 516.

Pericardium, paracentesis of the, 239.

Periscope, edited by Dr. Duffey, 94, 185, 283, 362, 461, 551.

Petroleum spirit and coal tar naphtha, 240.

Pharyngology, report on, 148.

Philadelphia, transactions of the College of Physicians of, *Rev.*, 182.

Phthisis, catarrhal pneumonic, Dr. Dempsey on, 348—climatic treatment of, 367.

Physicians, transactions of the Medical Society of the College of, 516.

Physiology, works on, *Rev.*, 126.

Picrotoxin in epilepsy, 364.

Pills of citrate of quinine and iron, 96.

Pilocarpine, 486.

Poisoning, what constitutes, 51—starch iodide in, 56—by carbolic acid, 515.

Poisons, domestic, 53.

Pompholyx, Dr. W. G. Smith on, 390.

Poole, Dr. T. W., physiological therapeutics, *Rev.*, 132.

Porro's operation, 432.

Porter, Surgeon-Major J. H., the surgeon's pocket-book, *Rev.*, 420.

Potassium, chlorate of, Dr. Harkin on, 403.

Power, Dr. H., lexicon of medicine, *Rev.*, 48.

Power, Mr. D'Arcy, manual for the physiological laboratory, *Rev.*, 126.

Prescriptions, explosive, 245.

Priapism in leucocytæmia, 368.

Proceedings of the Pathological Society of Dublin, 61, 157, 250, 334, 448, 523.

Puritus vulva, iodoform in, 550.

Puerperal Panophthalmitis, 551.

Purdon, Dr. C. D., the infantile mortality of Belfast, 580.

Records, clinical, 84, 175, 452.

Rectum, stricture of, treatment of, 94.

Report—of Cork-street Hospital, by Dr. Harvey, 8—of Tyrone Infirmary, *Rev.*, 49—on medical jurisprudence, 50—on cataract operations, by Mr. J. B. Story, 97—on rhinology, pharyngology, and laryngology, 136—on surgery, 231—on materia medica and therapeutics, 240—of the Cork Maternity, by Dr. G. Atkins, 297—of the Royal Sanitary Commission, Dublin, *Rev.*, 325—on midwifery and gynaecology, 432.

Reports, half-yearly—medical jurisprudence, by Dr. S. Woodhouse, 50—rhinology, pharyngology, and laryngology, by Dr. K. Franks, 136—surgery, by Dr. Thomson, 231—materia medica and therapeutics, by Dr. W. G. Smith, 240—midwifery and diseases of women, by Dr. A. V. Macan, 432.

Reynolds, Mr. J. J., diseases of women, *Rev.*, 381.

Rheumatic fever, novel treatment of, 189—salicylic acid in, by Dr. Young, 193.

Rhinology, report on, 136.

Rigor mortis, ante-mortem, 56.

Rivington, Dr. Walter, Carmichael prize essay, *Rev.*, 217—medical education, *Rev.*, 220.

Roberts, Dr. F. T., theory and practice of medicine, *Rev.*, 184.

Rockwell, Dr. A. D., lectures on electricity, *Rev.*, 132.
 Röthelin, Dr. Denis D. Donovan on, 447.
 Rubber instruments, method of preserving, 288.
 Rupture of the uterus, treatment of, 435.

Salicin and salicylic acid in acute rheumatism, by Dr. Young, 193.
 Salicylate of soda in iritis, 364.
 Salicylic acid in acute rheumatism, by Dr. Young, 193.
 Sanitary and meteorological notes, 92, 182, 281, 360, 459, 548.
 Sanitary Commission, Dublin, report of the, *Rev.*, 325.
 Scientific inventions, 190, 552.
 Sedgwick, Dr. L. W., lexicon of medicine, *Rev.*, 48.
 Smallpox, prevention of scars of, 268.
 Smith, Dr. W. G., report on materia medica and therapeutics, 240—on patent foramen ovale, 262—phthisis laryngea, 263—recurrent vesicular disease of the hands, 390—case of pericarditis, 516.
 Soap bark, 243.
 Society, Pathological, of Dublin, proceedings of the, 61, 157, 250, 334, 443, 523—Ulster Medical, transactions of the, 71, 269, 348, 530—Cork Medico-Chirurgical, transactions of the, 447—Medical, of the College of Physicians, transactions of the, 516.
 Spinal irritation, by Mr. Elliott, 369.
 Spitka, Mr. Edward D., archives of comparative medicine and surgery, *Rev.*, 514.
 Starch iodide in poisoning, 56.
 Stevenson, Dr. W. E., the Medical Act Amendment Bill, *Rev.*, 216.
 Stokes, Mr. W., on myo-fibroma of the uterus, 63—coxo-femoral arthritis, 335—pubic luxation of femur, 342.
 Stoker, Mr. Thornley, abdominal aneurism, 250.
 Story, Mr. J. B., report on cataract operations, 97—enucleation of eyeball for panophthalmitis, 260.
 Strangulation, sign of death by, 249.
 Strychnia, detection of, in exhumed bodies, 54.
 Sulpho-carbolates, Dr. Withers on the, 354.
 Surgery, report on, 231.
 Swain, Mr. W. P., surgical emergencies, *Rev.*, 324.
 Swan, Mr. R. S., on the treatment of genu valgum by condylotomy with the chisel, 465.
 Sweat, reaction of, 95.
 Syme's amputation, Mr. Wheeler's case of, 523.

Taylor, Dr. A. S., obituary notice of, 59.
 Temperature of body, influence of change of position on, 28.
 Terrors, nocturnal, in children, 458.
 Thalamic epilepsy, 366.
 Therapeutics, report on, 240.
 Thompson, Mr. E. C., report of Tyrone Infirmary, *Rev.*, 49.
 Thompson, Sir Henry, food and feeding, *Rev.*, 313—practical lithotomy and lithotripsy, *Rev.*, 510.
 Thomson, Mr. William, on embolism of abdominal aorta, 157—report on surgery, 231—tracheotomy in croup, 265, report of the Committee of Reference on his specimen of croup, 347—complete luxation of the spine, 384.
 Thoracic aneurism, a new physical sign in, 464.
 Thudichum, Dr. J. L. W., annals of chemical medicine, *Rev.*, 47.
 Thymol, formula for use of, 248.
 Tongue, removal of the, by splitting, 238.
 Tracheal tube introduced by the mouth, 231.
 Transactions—of the Ulster Medical Society, 71, 269, 348, 530—of the College of Physicians of Philadelphia, *Rev.*, 132—of the Cork Medico-Chirurgical Society, 447—of the Medical Society of the College of Physicians, 516.
 Trimen, Dr. H., medicinal plants, *Rev.*, 227.
 Typhus fever, Dr. Fitzmaurice on, 307.
 Tyrone Infirmary, report of, *Rev.*, 49.
 Tyson, Dr. J., examination of the urine, *Rev.*, 48.

Ulster Medical Society, transactions of the, 71, 269, 348, 530.
 Uremia, occipital headache in, 463.
 Urine, recent works on the, *Rev.*, 41.
 Uriniferous tubules, casts of the, 367.
 Uterus, mechanical dilatation of the, 436—rupture of the, 435.

Vaccinifers, on what day should they be charged, 119.
 Vaginitis, diagnosis of, 359.
 Vena cava superior, absence of the, 443.
 Vesicular disease of the hands, recurrent, by Dr. W. G. Smith, 390.
 Viability, early, 57.
 Vital statistics, 92, 182, 281, 360, 459, 548.
 Vovard, Dr. (de Bordeaux), du rhumatisme, *Rev.*, 320.

Wainright, Mr. W. P., radical mechanics of locomotion, *Rev.*, 418.
 Walters, Rev. J. T., notes on Dr. Kraus's Carlsbad, *Rev.*, 224.

Waring, Dr. E. J., *bibliotheca therapeutica*, *Rev.*, 418.
 Water, hot, in surgery, 190.
 Wheeler, Mr. W. I., on melanotic carcinoma of thigh, 160—caries of the tibia, 345—stump after Syme's amputation, 523.
 Whittaker, Dr. J. T., primer of the urine, *Rev.*, 41.
 Whooping-cough, benzoate of soda in, 461.
 Wilson, Mr. W. S., ocean as a health-resort, *Rev.*, 415.
 Winter, Dr. W. H. T., cases of haemophilia, 302.
 Withers, Dr., on the sulpho-carbolates, 354.
 Women, diseases of, works on, *Rev.*, 330.
 Woodhouse, Dr. Stewart, report on medical jurisprudence, 50.
 Woolsorter's disease, 51.
 Works on the urine, *Rev.*, 41—physiology, *Rev.*, 126—the medical profession, *Rev.*, 217—diseases of women, *Rev.*, 330—climatology, *Rev.*, 409.
 Young, Dr. Charles G., on salicin and salicylic acid in rheumatism, 193.

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